



GAIL FARBER, Director

# COUNTY OF LOS ANGELES

## DEPARTMENT OF PUBLIC WORKS

*"To Enrich Lives Through Effective and Caring Service"*

900 SOUTH FREMONT AVENUE  
ALHAMBRA, CALIFORNIA 91803-1331  
Telephone: (626) 458-5100  
<http://dpw.lacounty.gov>

ADDRESS ALL CORRESPONDENCE TO:  
P.O. BOX 1460  
ALHAMBRA, CALIFORNIA 91802-1460

IN REPLY PLEASE

REFER TO FILE: **AS-0**

May 19, 2015

### **NOTICE OF REQUEST FOR PROPOSALS FOR AS-NEEDED WEATHER MODIFICATION (CLOUD SEEDING) SERVICES (2015-AN013)**

PLEASE TAKE NOTICE that Public Works requests proposals for the contract As-Needed Weather Modification (Cloud Seeding) Services (2015-AN013). This contract has been designed to have a potential maximum contract term of five years, consisting of an initial one-year term and four potential additional one-year option renewals. The total annual contract amount of these services is estimated to be \$550,000. The Request for Proposals (RFP) with contract specifications, forms, and instructions for preparing and submitting proposals may be accessed at <http://dpw.lacounty.gov/asd/contracts> or may be requested from Mr. Andres Campaz at (626) 458-4072, [acampaz@dpw.lacounty.gov](mailto:acampaz@dpw.lacounty.gov), Monday through Thursday, 7 a.m. to 5 p.m.

**PLEASE CHECK THE WEBSITE FREQUENTLY FOR ANY CHANGES TO THIS SOLICITATION. ALL ADDENDA AND INFORMATIONAL UPDATES WILL BE POSTED AT <http://dpw.lacounty.gov/asd/contracts>.**

**Minimum Requirement(s):** Proposers must meet all minimum requirements set forth in the RFP document including, but not limited to:

1. Proposer must have a minimum of five years of experience within the last ten years providing weather modification (cloud seeding) services to government, utility, or similar agencies.
2. Proposer's managing employee must be a Weather Modification Association certified manager. **Subcontracting is not allowed to fulfill this requirement.**

A Proposers' Conference will be held on **Tuesday, June 2, 2015, at 2 p.m.** at Public Works Headquarters, 900 South Fremont Avenue, Alhambra, California 91803, in Conference Room D. **ATTENDANCE BY THE PROPOSER OR AN AUTHORIZED REPRESENTATIVE AT THE CONFERENCE IS MANDATORY.** Public Works will

**reject proposals from those whose attendance at the conference cannot be verified.** Attendees should be prepared to ask questions at that time about the specifications, proposal requirements, and contract terms. After the conference, Proposers must submit questions in writing and request information for this solicitation within three business days from the date of the conference.

**The deadline to submit proposals is Wednesday, June 17, 2015, at 5:30 p.m.** Please direct your questions to Mr. Campaz at the number listed on the previous page.



Individuals requiring reasonable accessibility accommodations may request written materials in alternate formats, physical accessibility accommodations, sign language interpreters, or other reasonable accommodations by contacting our departmental Americans with Disabilities Act Coordinator at (626) 458-4081, from 7:30 a.m. to 5 p.m., Monday through Thursday (excluding holidays). Persons who are deaf or hard of hearing may make contact by first dialing the California Relay Service at 7-1-1. Requests should be made at least one week in advance to ensure availability. When making a reasonable accommodation request, please reference AS-0.

Very truly yours,

GAIL FARBER  
Director of Public Works

A handwritten signature in black ink, appearing to read "Gary Hildebrand", written in a cursive style.

GARY HILDEBRAND  
Deputy Director

AC  
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Enc.

**COUNTY OF LOS ANGELES**  
**DEPARTMENT OF PUBLIC WORKS**  
**REQUEST FOR PROPOSALS**  
**FOR**  
**AS-NEEDED WEATHER MODIFICATION**  
**(CLOUD SEEDING) SERVICES (2015-AN013)**



Approved May 18, 2015  
Gail Farber  
Director of Public Works

By: Sandy McDaniel  
Deputy Director

REQUEST FOR PROPOSALS  
FOR  
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## PART I

### REQUEST FOR PROPOSALS

#### SECTION 1

#### INTRODUCTION

##### A. Proposers' Conference

Each Proposer or an authorized representative must attend a Proposers' Conference to be held at the place, date, and time announced in the Notice of Request for Proposals. **ALL INTERESTED PROPOSERS OR THEIR AUTHORIZED REPRESENTATIVE MUST ATTEND THIS CONFERENCE.** **Proposals received from Proposers not signed in as attending this conference will be rejected as nonresponsive.** Proposers are encouraged to be prepared to ask questions concerning the Request for Proposals (RFP), Contract requirements, specifications, terms, and conditions. For example, questions may address concerns, if any, that the application of minimum mandatory requirements, evaluation criteria, and/or business requirements would unfairly disadvantage Proposers or, due to unclear instructions, may result in the County not receiving the best possible responses from Proposers. Upon conclusion of the Proposers' Conference, Public Works will only provide further clarifications and/or answers concerning this solicitation through an addendum and/or informational update, to all who attended the conference.

##### B. Minimum Mandatory Requirements

Interested and qualified Proposers, who can demonstrate their ability to successfully provide the required services outlined in Exhibit A, Scope of Work, of this RFP are invited to submit a proposal, provided they meet the following requirement(s) at the time of proposal submission:

1. Proposer must have a minimum of five years of experience within the last ten years providing weather modification (Cloud Seeding) services to government, utility, or similar agencies.
2. Proposer's managing employee must be a Weather Modification Association (WMA) certified manager. **Subcontracting is not allowed to fulfill this minimum requirement.**

##### C. Contract Analyst

Proposers are instructed not to contact any County personnel other than the Contract Analyst listed below regarding this solicitation. All contact regarding this RFP or any matter relating thereto must be in writing and may be mailed, e-mailed, or sent via facsimile to:

County of Los Angeles Department of Public Works  
Administrative Services Division – 9th Floor  
Attention Mr. Andres Campaz  
P.O. Box 1460  
Alhambra, California 91802-1460

E-mail: [acampaz@dpw.lacounty.gov](mailto:acampaz@dpw.lacounty.gov)  
Telephone: (626) 458-4072  
Facsimile: (626) 458-4194

If it is discovered that a Proposer contacted and received material information from any County personnel, other than the Contract Analyst named in the Notice of Request for Proposals and above, regarding this solicitation, the County, in its sole determination, may disqualify their proposal from further consideration.

D. Child Support Compliance Program

Proposers shall: 1) fully comply with all applicable State and Federal reporting requirements relating to employment reporting for its employees; and 2) comply with all lawfully served Wage and Earnings Assignment Orders and Notices of Assignment, and continue to maintain compliance during the term of any Contract that may be awarded pursuant to this solicitation. Failure to comply may be cause for termination of a Contract and/or initiation of debarment proceedings against the noncompliant Contractor (County Code, Chapter 2.202).

E. County Rights and Responsibilities

The County has the right to amend this RFP by written addendum prior to the proposal submission deadline. The County is responsible only for that which is expressly stated in this solicitation document and any authorized written addenda. Addendums shall be made available to each person or organization that attended the Proposers' Conference. Should an addendum(s) require additional information not previously requested, failure to address the requirements of such addendum may result in the proposal not being considered, as determined in the sole discretion of the County. The County is not responsible for and shall not be bound by any representations otherwise made by any individual acting or purporting to act on its behalf.

F. Defaulted Property Tax and Reduction Program

1. The resultant Contract from this RFP will be subject to the requirements of the County's Defaulted Property Tax Reduction Program ("Defaulted Tax Program") (Los Angeles County Code, Chapter 2.206). The successful Contractors should carefully read the Defaulted Tax Program Ordinance, Exhibit E. Proposers should carefully read the pertinent Defaulted Tax Program provisions in Part II, Exhibit B, Service Contract General

Requirements, Section 11, Compliance with County's Defaulted Property Tax Reduction Program. The Defaulted Tax Program applies to both Contractors and their Subcontractors, if any.

2. Proposers shall be required to certify that they are in full compliance with the provisions of the Defaulted Tax Program and shall maintain compliance during the term of any Contract that may be awarded pursuant to this solicitation or shall certify that they are exempt from the Defaulted Tax Program by completing Certification of Compliance with The County's Defaulted Property Tax Reduction Program (Form PW-17). Failure to maintain compliance, or to timely cure defects, may be cause for termination of a Contract or initiation of debarment proceedings against the noncompliant Contractor (Los Angeles County Code, Chapter 2.202). Proposals that fail to comply with the certification requirements of the Defaulted Tax Program will be considered nonresponsive and excluded from further consideration.

G. GAIN and GROW Programs

As a threshold requirement for consideration for Contract award, Proposers shall demonstrate a proven record of hiring participants in the County's Department of Public Social Services Greater Avenues for Independence (GAIN) or General Relief Opportunity for Work (GROW) Programs or shall attest to a willingness to consider GAIN/GROW participants for any future employment openings if they meet the minimum qualifications for that opening. Proposers shall attest to a willingness to provide employed GAIN/GROW participants access to the Proposers' employee mentoring program, if available, to assist these individuals in obtaining permanent employment and/or promotional opportunities.

Proposers who are unable to meet this requirement shall not be considered for Contract award. Proposers shall certify compliance on Form PW-10, GAIN and GROW Employment Commitment.

H. SPARTA Program

A County program, known as SPARTA (Service Providers, Artisan, and Tradesman Activities) may be able to assist potential Contractors in obtaining affordable liability insurance. The SPARTA Program is administered by the County's insurance broker, Merriwether & Williams. For additional information, Proposers may call Merriwether & Williams toll-free at (800) 420-0555 or can access their website directly at [www.2sparta.com](http://www.2sparta.com).

I. Indemnification and Insurance

The successful Contractor will be required to comply with the indemnification provisions contained in Exhibit B, Section 5, Indemnification and Insurance Requirements. The Contractor will be required to procure, maintain, and provide the County proof of insurance coverage for all programs of insurance along with

associated amounts specified throughout the entire term of the proposed Contract, without interruption or break in coverage.

J. Injury and Illness Prevention Program

The successful Contractor will be required to comply with the State of California's Cal/OSHA's regulations. Section 3203 of Title 8 in the California Code of Regulations requires all California employers to have a written, effective Injury and Illness Prevention Program that addresses hazards pertaining to the particular workplace covered by the program.

K. Interpretation of Request for Proposals

The definitions and other rules of interpretation set forth in Part II, Sample Agreement and Exhibit B, Section 1, Interpretation of Contract, also apply to interpretation of this RFP.

L. Jury Service Program

1. The resultant Contract from this RFP will be subject to the requirements of the County's Contractor Employee Jury Service Ordinance (Jury Service Program, Los Angeles County Code, Chapter 2.203). Proposers should carefully read the pertinent jury service provisions in the Part II, Exhibit B, Service Contract General Requirements, Section 7, Compliance with County's Jury Service Program. The Jury Service Program applies to both Contractors and their Subcontractors, if any. Proposals that fail to comply with the requirements of the Jury Service Program will be considered nonresponsive and excluded from further consideration.
2. The Jury Service Program requires Contractors and their Subcontractors, if any, to have and adhere to a written policy that provides that its employees shall receive from the Contractor, on an annual basis, no less than five days of regular pay for actual jury service. The policy may provide that employees deposit any fees received for such jury service with the Contractor or that the Contractor deduct from the employee's regular pay the fees received for jury service. For purposes of the Jury Service Program, "employee" means any California resident who is a full-time employee of a Contractor, and "full-time" means 40 hours or more worked per week or a lesser number of hours if: 1) the lesser number is a recognized industry standard as determined by the County; or 2) the Proposer has a long-standing practice that defines the lesser number of hours as full-time. Therefore, the Jury Service Program applies to all of a Contractor's full-time California employees, even those not working specifically on the County project. Full-time employees providing short-term, temporary services of 90 days or less within a 12-month period are not considered full-time for purposes of the Jury Service Program.

3. There are two ways in which a Contractor might not be subject to the Jury Service Program. The first is if the Contractor does not fall within the Jury Service Program's definition of "Contractor." The Jury Service Program defines "Contractor" to mean a person, partnership, corporation, or other entity which has a Contract with the County or a Subcontract with a County Contractor and has received or will receive an aggregate sum of \$50,000 or more in any 12-month period under one or more County contracts or Subcontracts. The second is if the Contractor meets one of the two exceptions to the Jury Service Program. The first exception concerns small businesses and applies to Contractors that have: 1) ten or fewer employees; and 2) annual gross revenues in the preceding 12 months which, if added to the annual amount of this proposed Contract is less than \$500,000; and 3) is not an "affiliate or subsidiary of a business dominant in its field of operation." The second exception applies to Contractors that possess a collective bargaining agreement that expressly supersedes the provisions of the Jury Service Program. The Contractor is subject to any provision of the Jury Service Program not expressly superseded by the collective bargaining agreement.
4. If a Contractor does not fall within the Jury Service Program's definition of "Contractor" or if it meets any of the exceptions to the Jury Service Program, then the Contractor must so indicate in the Contractor Employee Jury Service Program Application for Exception and Certification Form (Form PW-3) and include with its submission all necessary documentation to support the claim, such as tax returns or a collective bargaining agreement, if applicable. Upon reviewing the Contractor's application, the County will determine, in its sole discretion, whether the Contractor falls within the definition of "Contractor" or meets any of the exceptions to the Jury Service Program. The County's decision will be final.

M. Local Small Business Enterprise Preference Program

1. To the extent permitted by State and Federal law and when the price category is scored, the County will give Local SBE preference during the solicitation process to businesses that meet the definition of a Local Small Business Enterprise (Local SBE), consistent with Chapter 2.204.030C.1 of the Los Angeles County Code. A Local SBE is defined as: 1) a business certified by the State of California as a small business and 2) has had its principal office located in Los Angeles County for at least one year. The business must be certified by the Office of Small Business as meeting the requirements set forth in Nos. 1 and 2 above prior to requesting the Local SBE Preference in a solicitation.
2. To apply for certification as a Local SBE, businesses may register at the Los Angeles County Office of Small Business' website at:

<http://www.laosb.org>



3. Certified Local SBEs must request the SBE Preference in their solicitation responses and may not request the preference unless the certification process has been completed and certification affirmed. Businesses must attach their Local SBE Certification Letter to a completed Form PW-9, Request for Local SBE Preference Program Consideration and CBE Firm/Organization Information Form with their proposal. Sanctions and financial penalties may apply to a business that knowingly, and with intent to defraud, seeks to obtain or maintain certification as a certified Local SBE.
4. Information about the State's small business enterprise certification regulations is in the California Code of Regulations, Title 2, Subchapter 8, Section 1896 et seq., and is also available on the California Department of General Services Office of Small Business Certification and Resources website at <http://www.dgs.ca.gov/pd/program/osds.aspx>.

N. Notification to County of Pending Acquisitions/Mergers by Proposing/Bidding Company

The Proposer shall notify the County of any pending acquisitions/mergers of their company. This information shall be provided by the Proposer on Form PW-1, Verification of Proposal. The proposed Contract will only be awarded to the entity that submitted the proposal. Any acquisitions and merger will be handled pursuant to Exhibit B, Section 2.B, Assignment and Delegation, and evaluated in accordance with the Board's policy regarding Contractors engaged in mergers and acquisitions. Failure of the Proposer to provide this information may eliminate its proposal/bid from any further consideration.

O. Prompt Payment Program

It is the intent of the County that Certified Local SBEs receive prompt payment for services they provide to County departments. Prompt payment is defined as 15 calendar days after the receipt of an undisputed and approved invoice.

P. Proposer's Charitable Contributions Compliance

California's "Supervision of Trustees and Fundraisers for Charitable Purposes Act" regulates receiving and raising charitable contributions. Among other requirements, those subject to the Charitable Purposes Act must register. The 2004 Nonprofit Integrity Act (SB 1262, Chapter 919) increases Charitable Purposes Act requirements. New rules cover California public benefit corporations, unincorporated associations, trustee entities, and may include similar foreign corporations doing business or holding property in California. Key Nonprofit Integrity Act requirements affect executive compensation, fundraising practices, and documentation. Charities with over \$2 million of revenues (excluding funds that must be accounted for to a governmental entity) have new audit requirements.

All prospective Contractors must determine if they receive or raise charitable contributions, which subject them to the Charitable Purposes Act and complete the certification form attached as Form PW-12. A completed Form PW-12 is a required part of any agreement with the County.

In Form PW-12, prospective Contractors certify either that:

1. They have determined that they do not now receive or raise charitable contributions regulated under the California Charitable Purposes Act (including the Nonprofit Integrity Act) but will comply if they become subject to coverage of those laws during the term of a County contract; or
2. They are currently complying with their obligations under the Charitable Purposes Act, attaching a copy of their most recent filing with the Registry of Charitable Trusts.

Prospective County Contractors that do not complete Form PW-12 as part of the solicitation process may, in the County's sole discretion, be disqualified for Contract award. A County Contractor that fails to comply with its obligations under the Charitable Purposes Act is subject to either Contract termination or debarment proceedings or both (County Code, Chapter 2.202).

Q. Proposal Requirements and Contract Specifications

1. Persons who wish to Contract with the County may respond to this RFP by submitting a proposal in the form described in the following Sections and Attachments. Proposers are instructed to carefully read these Terms, Requirements, Specifications, Conditions, Attachments, and Exhibits.
2. Requirements for proposals are explained in Part I of this RFP.
3. Contract's specifications and requirements are fully described in Part II, Sample Agreement; Exhibit A, Scope of Work; and Exhibit B, Service Contract General Requirements. Proposers are also requested to review Attachment 1, Policy on Doing Business with Small Business; Attachment 2, Listing of Contractors Debarred in Los Angeles County; and Attachment 3, County of Los Angeles Lobbyist Ordinance.
4. Dates and times of the Proposers' Conference and for the submission of Proposals are set forth in the Notice of Request for Proposals.

R. Security and Background Investigations

Each of the Contractor's or Subcontractor's staff performing services under this Contract who is in a designated sensitive position, as determined by the County in County's sole discretion, shall undergo and pass a background investigation to the satisfaction of County as a condition of beginning and continuing to perform services under this Contract. Such background investigation must be obtained through fingerprints submitted to the California Department of Justice or other

entity acceptable to County to include State and local-level review, which may include, but shall not be limited to, criminal conviction information or background investigation. The fees associated with the background investigation shall be at the expense of the Contractor, regardless of whether the member of Contractor's staff passes or fails the background investigation.

If a member of Contractor's staff does not pass the background investigation, County may request that the member of Contractor's staff be removed immediately from performing services under the Contract. Contractor shall comply with County's request at any time during the term of the Contract. County will not provide to Contractor or to Contractor's staff any information.

S. Transitional Job Opportunities Preference Program

To the extent permitted by State and Federal law in evaluating proposals and when the price category is scored, the County will give preference to businesses that are certified by the County as Transitional Job Opportunity vendors, consistent with Chapter 2.205 of the Los Angeles County Code. A Certified Transitional Job Opportunity vendor is, and has been such for three years, an entity: that is a nonprofit organization recognized as tax exempt pursuant to section 501 (c)(3) of the Internal Revenue Services Code; set forth, under penalty of perjury, such information as requested by the County on either electronic or hard copy forms, along with their application form and three most recent annual tax returns to Public Works with their proposal response to contracting solicitation for which they are competing; has been in services to program participants; and provided a profile of their program a description of their program components designed to assist program participants, number of past program participants, and any other information requested by Public Works. Transitional Job Opportunities vendors must request the preference in their solicitation responses (Form PW-13) and may not receive the preference until their certification has been affirmed by Public Works. County must verify the Transitional Job Opportunity vendor certification prior to applying the preference. Sanctions and financial penalties may apply to a vendor that knowingly and with intent to defraud seeks to obtain or maintain certification as a Transitional Job Opportunities vendor.

T. Vendor Registration

Proposers must register online with the County's web-based vendor registration system to facilitate the Contract award process. Registration can be accomplished online via the Internet by accessing the County's home page at <https://camisvr.co.la.ca.us/webven/default.asp> and click on "New Registration". Being registered will assist the Proposer in receiving notifications of the release of County solicitations that may be of interest to the Proposer.

U. Disabled Veteran Business Enterprise (DVBE) Preference Program

1. The County will give Disabled Veteran Business Enterprise (DVBE) Preference during the solicitation process to businesses that meet the definition of a DVBE, consistent with Chapter 2.211 of the Los Angeles County Code. A DVBE is defined as: 1) a business which is certified by the State of California as a DVBE; or 2) a business which is certified by the Department of Veterans Affairs as a Service Disabled Veteran-Owned Small Business (SDVOSB).
2. Certified DVBEs must request the DVBE Preference in their solicitation responses and may not request the preference unless the certification process has been completed and certification affirmed.
3. In no case shall the DVBE Preference Program price or scoring preference be combined with any other county preference program to exceed 8 percent in response to any county solicitation.
4. Sanctions and financial penalties may apply to a business that knowingly, and with intent to defraud, seeks to obtain, or maintain certification as a certified DVBE.
5. To request the DVBE Preference, Proposer must complete and submit the Request for Disabled Veteran Business Enterprise Consideration form in Form PW-18 with supporting documentation with their proposal.

Information about the State's DVBE certification regulations is found in the California Code of Regulations, Title 2, Subchapter 8, Section 1896 et seq., and is also available on the California Department of General Services Office of Disabled Veteran Business Certification and Resources Website at <http://www.pd.dgs.ca.gov>.

Information on the Department of Veteran Affairs SDVOSB certification regulations is found in the Code of Federal Regulations, 38CFR 74 and is also available on the Department of Veterans Affairs Website at <http://www.vetbiz.gov>.

V. Time Off for Voting

The Contractor shall notify its employees, and shall require each Subcontractor to notify and provide to its employees, information regarding the time off for voting law (Elections Code, Section 14000). Not less than ten days before every Statewide election, every Contractor and Subcontractors shall keep posted conspicuously at the place of work, if practicable, or elsewhere where it can be seen as employees come or go to their place of work, a notice setting forth the provisions of Section 14000.

## SECTION 2

### PROPOSAL PREPARATION AND SUBMISSION

#### A. Proposal Format and Content Requirements

Proposals shall be bound and presented in the sequence, with the content tabbed and paginated in the format stated below. Failure to provide the required information or to strictly comply with these guidelines may be a basis for rejection of the Proposal as nonresponsive at the County's sole discretion:

1. Title page

The title page shall show the Proposer's name, title of the service requested, local address, telephone number, and date of submittal.

2. Table of Contents

A comprehensive table of contents shall list all material included in the Proposal.

3. Letter of Transmittal

A person legally authorized to enter into Contracts for the Proposer shall sign the Letter of Transmittal. The letter must include a brief statement of the Proposer's understanding of the work to be accomplished and a list of names of individuals authorized to make representations for the Proposer, their titles, addresses, e-mail addresses, and telephone numbers.

4. Support Documents for Corporations and Limited Liability Companies

a. Corporations

Proposer must provide a copy of the corporation's "Certificate of Good Standing" with the State of California or state of incorporation and the most recent "Statement by Domestic (or Foreign) Stock Corporation" as filed with the California Secretary of State or state of incorporation. The "Statement of Information" must list the corporate officers. If Proposer's most recent Statement has only the "No change in information" box checked, the Proposer must also submit the most recent endorsed "Statement of Information," which includes a list of corporate officers.

b. Limited Liability Companies

Proposer must provide a copy of the most recent "Statement by Domestic (or Foreign) Stock Corporation" as filed with the California Secretary of State or state of incorporation. If Proposer's most

recent Statement has only the "No change in information" box checked, the Proposer must also submit the most recent endorsed "Statement of Information," which includes a list of corporate officers. The "Statement of Information" must list the corporate officers.

5. Experience

**FAILURE TO PREPARE AND INCLUDE AN EXPERIENCE SECTION MAY RESULT IN DISQUALIFICATION OF THE PROPOSAL.**

Proposer's capabilities and experience shall be described comprehensively in order to provide for a meaningful evaluation and assessment. The narrative should discuss each of the following subject areas:

- Background.
- Organization (provide a chart or outline of the firm's organizational structure showing the roles of all personnel involved with this Contract, if awarded, identifying each by name/position).
- Identify the roles of and submit resumes for the firm, principals, managing employees, on-site supervisors, other key staff, presenters, Subcontractors, and any other staff involved with this Contract, if awarded.
- Provide additional information for staff involved with this Contract, if awarded, with specific information regarding length and quality of experience providing similar services as described in Exhibit A, Scope of Work.
- Demonstrate how the Proposer complies with requirements outlined in Part I, Section 1.B, Minimum Mandatory Requirements.
  - Proposer must have a minimum of five years of experience within the last ten years providing weather modification (Cloud Seeding) services to government, utility, or similar agencies.
  - Proposer's managing employee must be a Weather Modification Association (WMA) certified manager. **(Subcontracting is not allowed to fulfill this minimum requirement.)**

6. Work Plan

**FAILURE TO PREPARE AND INCLUDE A WORK PLAN MAY RESULT IN DISQUALIFICATION OF THE PROPOSAL.**

Describe comprehensively and in detail how the service will be performed to meet or exceed the requirements of Exhibit A, Scope of Work. Prepare and include a staffing plan that specifically describes the number of staff who will

be committed to the project and their qualifications. If possible, list them by name. Describe and include the schedules, procedures, techniques, and methods that will be employed in meeting the objectives outlined in the Scope of Work. These may include personnel management, training, subcontracting, emergency and contingency planning, recruitment and replacement, supervision, supplies, equipment, uniforms, identification badges, safety, communications, and quality control.

7. Quality Assurance Program

Describe Proposer's Quality Assurance Program (Program) that will be utilized by the Proposer as a self-monitoring tool to ensure that these services are performed in accordance with the County's Contract requirements and recommendations. The Program must ensure service deliveries outlined in Exhibit A, Scope of Work, are completed in a timely manner, the services will be free of defects, and how those results will be achieved. The Program must comprehensively address the Proposer's organizational process for consistently delivering those requirements.

The Proposer's staffing plan must include a qualified inspector to monitor compliance with the Program and deal with customer complaints and inquiries.

At a minimum, the Program outlined in your proposal shall address in detail:

- a. Policies and Procedures – Quality control procedures for the Proposer, Subcontractors, if any, and suppliers must be described. If a Subcontractor is to perform work, the Program must detail how that Subcontractor will interface with the Proposer and how the Proposer will ensure that the Subcontractor complies with the Program.
- b. Inspection Fundamentals – The Proposer shall provide samples of forms that outline required operations and quality levels. The Proposal must indicate the Proposer's inspection schedules, a methodology to correct deficiencies, level of supervision, and how the inspections are to be performed. The Proposal shall document the name, authority, relevant experience, and qualifications of the person with overall responsibility for the inspection system.
- c. Quality Control Documentation, Review, and Reporting – The Program shall describe and list the records to be maintained. The Program shall detail how the Proposer will maintain inspection records and make them available to the County.

8. Subcontractors

If Subcontractors are to be used, submit a description of their proposed assignments, qualifications, experience, staffing, and schedules.

9. Licenses and Certifications

Submit copies of the Proposer's managing employee's Weather Modification Association (WMA) certification.

10. Insurance

Submit completed and signed Form PW-16, Proposer's Insurance Compliance Affirmation, acknowledging that the Proposer will comply with all provisions set forth in Exhibit B, Section 5, Indemnification and Insurance Requirements, of this Request for Proposals if awarded the Contract. In Form PW-16, Proposer affirms that the Proposer will procure, maintain, and provide the County with proof of insurance and coverage as specified by this Request for Proposals throughout the entire term of the proposed Contract, without interruption or break in coverage.

11. Forms List

Complete and submit the following forms, which are included in the RFP package:

PW-1	Verification of Proposal
PW-2	Schedule of Prices
PW-3	County of Los Angeles Contractor Employee Jury Service Program Application for Exception and Certification Form
PW-4	Contractor's Industrial Safety Record
PW-5	Conflict of Interest Certification
PW-6	Proposer's Reference List
PW-7	Proposer's Equal Employment Opportunity Certification
PW-8	List of Subcontractors
PW-9	Request for Local Small Business Enterprise (SBE) Preference Program Consideration and CBE Firm/Organization Information Form (Attach Local SBE certification form if requesting SBE preference)
PW-10	GAIN and GROW Employment Commitment
PW-11	Transmittal Form to Request an RFP Solicitation Requirements Review (Submit only if requesting a review. If requesting a review, please submit form as early as possible but no later than ten business days of issuance of this RFP to the listed Contract Analyst.)



PW-12	Charitable Contributions Certification
PW-13	Transitional Job Opportunities Preference Application
PW-14	Proposer's List of Terminated Contracts
PW-15	Proposer's Pending Litigations and Judgments
PW-16	Proposer's Insurance Compliance Affirmation
PW-17	Certification of Compliance with the County's Defaulted Property Tax Reduction Program
PW-18	Request for Disabled Veteran Business Enterprise (DVBE) Preference Program Consideration Form
PW-19	Proposer's Compliance with the Minimum Requirements of the RFP

(Proposer should note that any change, edit, deletion, etc., of these forms by the Proposer may subject the Proposer's Proposal to disqualification, at the sole discretion of the County.)

12. Subcontractors' Forms List

The County seeks diverse, broad-based participation in its contracting. Subcontractors, if any, shall be subject to all requirements set forth in the RFP that are applicable to Contractors in general. If Subcontractors are to be employed, Proposer must submit a statement of their proposed assignments, qualifications, experience, staffing, and schedules. In addition to this statement, the following forms must be completed and submitted for each Subcontractor contemplated:

PW-3	County of Los Angeles Contractor Employee Jury Service Program Application for Exception and Certification Form
PW-4	Contractor's Industrial Safety Record
PW-5	Conflict of Interest Certification
PW-7	Proposer's Equal Employment Opportunity Certification
PW-9	Request for Local Small Business Enterprise (SBE) Preference Program Consideration and CBE Firm/Organization Information Form (Part II of form only)
PW-10	GAIN and GROW Employment Commitment
PW-12	Charitable Contributions Certification

13. Additional Information

Additional information that is not presented elsewhere and is essential to a fair evaluation must appear in the last Section of the Proposal and be labeled "Additional Information." If there is no additional information the Proposer wishes to present, this Section will consist of the statement: "There is no additional information we wish to present."

B. Proposal Submission

1. Proposals shall be submitted with **seven** complete sets of the Proposal that includes all related information in the following formats:

- Paper: One original and four copies.
- Electronic: Two electronic copies on a CD or USB Drive in PDF format as follows:
  - One original electronic copy.
  - One redacted electronic copy – Proposer shall redact any trade secret, confidential, proprietary, or other personal information from the Proposal such as Social Security numbers.

**Please note:** The two electronic copies of your proposal will not be used for evaluation purposes. The evaluators will evaluate the content of the original, hard copies of the submitted proposal only. Proposers are responsible to include paper copies of all information, including information on the electronic copies, to the hard copies of the proposal for such information to be evaluated.

Proposals received after the closing date and time specified in the Notice of Request for Proposals will be rejected by Public Works as nonresponsive.

2. Submit Proposals to the County of Los Angeles Department of Public Works Cashier, located on the Mezzanine Floor, 900 South Fremont Avenue, Alhambra, California 91803, in a package that clearly identifies the Proposer and this RFP. Proposals are received only when accepted and time stamped by the Cashier. All other indications of apparent timely delivery may be disregarded.
3. It is the responsibility of the Proposer to instruct delivery services, such as United Parcel Service and Federal Express, to deliver Proposals directly to the Cashier. Proposals submitted via facsimile or e-mail will not be accepted.
4. Proposals delivered by other means, including United States Postal Service, may be delayed in Public Works' mail system, resulting in untimely delivery

to the Cashier and possible failure to meet the Proposal submission deadline. Delays and missed deadlines for submission of proposals not delivered in strict compliance with this RFP shall be the sole responsibility of the Proposer, not of the County, Public Works, or any Special District.

## SECTION 3

### GENERAL CONDITIONS OF REQUEST FOR PROPOSALS

#### A. Acceptance or Rejection of Proposals

The right is reserved to reject any or all proposals that, in the judgment of the Board or Director, are not in the best interests of the County/Public Works/Special Districts. The County further reserves the right to cancel this request for proposals at any time at its sole discretion. In the event of any such rejection of proposals or cancellation of this solicitation, the County will not be liable for any costs incurred in connection with the preparation and submittal of a Proposal.

Proposals signed by an agent other than the president and secretary of a corporation or a member of a general copartnership must be submitted with a power of attorney or corporate resolution, certified by the secretary or assistant secretary, authorizing such signature; otherwise, the Proposal may be rejected as unauthorized and nonresponsive.

No proposal will be considered unless the Proposer submits a Proposal for all requested items. If the solicitation document requests multiple quotations, no Proposal will be considered unless the Proposer submits a price on all items within each category; however, the solicitation document may not require the Proposer to submit a price on all of the categories.

#### B. Altering Solicitation Document

The wording of the solicitation document shall not be changed. Any additions, conditions, limitations, or provisions inserted by the Proposer will render their Proposal irregular and may cause its rejection as nonresponsive.

#### C. County Responsibility

The County will not be responsible for representation made by any of its officers or employees prior to the execution of the proposed Contract unless such understanding or representation is included in the proposed Contract.

#### D. Determination of Proposer Responsibility

1. A responsible Proposer is a Proposer who has demonstrated the attribute of trustworthiness as well as quality, fitness, capacity, and experience to satisfactorily perform the proposed Contract. It is the County's policy to conduct business only with responsible Contractors.
2. Proposers are hereby notified that, in accordance with Chapter 2.202 of the Los Angeles County Code, the County may determine whether the Proposer is responsible based on a review of the Proposer's performance on any Contracts including, but not limited to, County Contracts. Particular attention will be given to violations of labor laws related to employee

compensation and benefits and evidence of false claims made by the Proposer against public entities. Labor law violations which are the fault of Subcontractors and of which the Proposer had no knowledge shall not be the basis of a determination that the Proposer is not responsible.

3. The County may declare a Proposer to be nonresponsible for purposes of the proposed Contract if the Board, in its discretion, finds that the Proposer has done any of the following: (1) violated a term of a Contract with the County or a nonprofit corporation created by the County; (2) committed an act or omission which negatively reflects on the Proposer's quality, fitness, or capacity to perform a Contract with the County, any other public entity, or a nonprofit corporation created by the County, or engaged in a pattern or practice which negatively reflects on same; (3) committed an act or omission which indicates a lack of business integrity or business honesty; or (4) made or submitted a false claim against the County or any other public entity.
4. If there is evidence that the highest-rated Proposer may not be responsible, Public Works will notify the Proposer in writing of the evidence relating to the Proposer's responsibility and its intention to recommend to the Board that the Proposer be found not responsible. Public Works will provide the Proposer and/or the Proposer's representative with an opportunity to present evidence as to why the Proposer should be found to be responsible and to rebut evidence, which is the basis for Public Works' recommendation.
5. If the Proposer presents evidence in rebuttal to Public Works, Public Works will evaluate the merits of such evidence, and based on that evaluation, make a recommendation to the Board. The final decision concerning the responsibility of the Proposer will reside with the Board.
6. These terms shall also apply to any proposed Subcontractors of Proposer on County Contracts.

E. Disqualification of Proposers

More than one proposal from an individual, firm, partnership, corporation, or association under the same or different names will not be considered. Reasonable grounds for believing that any Proposer has an interest in more than one proposal for the work contemplated may cause the rejection of all proposals in which such Proposer has interest on the basis of nonresponsibility and/or nonresponsiveness. If there is reason for believing that collusion exists among the Proposers, such collusion by the participants may be cause for the rejection of their proposals or future proposals on the basis of nonresponsibility and/or nonresponsiveness and may subject such Proposers to debarment.

F. Gratuities

1. It is improper for any County officer, employee, or agent to solicit consideration, in any form, from a Proposer with the implication, suggestion, or statement that the Proposer's provision of the consideration may secure more favorable treatment for the Proposer in the award of the proposed Contract or that the Proposer's failure to provide such consideration may negatively affect the County's consideration of the Proposer's submission. A Proposer shall not offer or give, either directly or through an intermediary, consideration, in any form, to a County officer, employee, or agent for the purpose of securing favorable treatment with respect to the award of the proposed Contract.
2. A Proposer shall immediately report any attempt by a County officer, employee, or agent to solicit such improper consideration. The report shall be made either to the County manager charged with the supervision of the employee or to the County Auditor-Controller's Employee Fraud Hotline at (800) 544-6861. Failure to report such a solicitation may result in the Proposer's submission being rejected on the basis of nonresponsibility and/or nonresponsiveness.
3. Among other items, such improper consideration may take the form of cash; discounts; services; and the provision of travel, entertainment, or tangible gifts.

G. Knowledge of Work to be Done

By submitting a Proposal, Proposer shall be held to have carefully read this RFP, all attachments, and exhibits; satisfied themselves before the delivery of their Proposal as to their ability to meet all of the requirements and difficulties attending the execution of the proposed work; and agreed that if awarded a Contract, no claim will be made against the County based on this RFP including, without limitation, claims based on any ambiguity, or misunderstanding. Furthermore, the Proposer has carefully examined the location(s) of the proposed work, and is familiar with all of the physical and climatic conditions, and makes this Proposal solely upon the Proposer's own knowledge. The Proposer has carefully examined these specifications and requirements, both in general and in detail, any drawings attached, and any additional communications sent and makes their Proposal in accordance therewith. If Proposer's Proposal is accepted, the Proposer will enter into a written Contract with the County for the performance of the proposed work and will accept payment based on the prices shown in Form PW-2, Schedule of Prices, as full compensation for work performed. It is understood and agreed that the quantities set forth in Form PW-2, Schedule of Prices, and this RFP are only estimates, and the unit prices will apply to the actual quantities, whatever they may be.

H. Notice to Proposers Regarding the Public Records Act

1. Responses to this solicitation shall become the exclusive property of the

County. Absent extraordinary circumstances, the recommended proposer's proposal will become a matter of public record when (1) Contract negotiations are complete; (2) (Department) receives a letter from the recommended Proposer's authorized officer that the negotiated Contract is the firm offer of the recommended Proposer; and (3) (Department) releases a copy of the recommended Proposer's proposal in response to a Notice of Intent to Request a Proposed Contractor Selection Review under Board Policy No. 5.055. Notwithstanding the above, absent extraordinary circumstances, all proposals will become a matter of public record when the Department's proposer recommendation appears on the Board agenda. Exceptions to disclosure are those parts or portions of all proposals that are justifiably defined as business or trade secrets, and plainly marked by the Proposer as "Trade Secret," "Confidential," or "Proprietary."

2. The County shall not, in any way, be liable or responsible for the disclosure of any such record or any parts thereof, if disclosure is required or permitted under the California Public Records Act or otherwise by law. A blanket statement of confidentiality or the marking of each page of the Proposal as confidential shall not be deemed sufficient notice of exception. The Proposers must specifically label only those provisions of their respective Proposal which are "Trade Secret," "Confidential," or "Proprietary" in nature. Only those provisions labeled as "Trade Secret," "Confidential," or "Proprietary" in nature at the time of Proposal submission will be accepted. The Proposers will not be granted opportunity to make any change or label any portion of their respective Proposal as "Trade Secret," "Confidential," or "Proprietary" after the submission deadline of the Proposals.
3. In the event County is required to defend an action on a Public Records Act request for any of the aforementioned documents, information, books, records, and/or contents of a proposal marked "Trade Secret," "Confidential," or "Proprietary," Proposer agrees to defend and indemnify County from all costs and expenses, including reasonable attorney's fees, in connection with any requested action or liability arising under the Public Records Act.

I. Notice to Proposers Regarding the County Lobbyist Ordinance

The Board has enacted an ordinance regulating the activities of persons who lobby County officials. This ordinance, referred to as the "Lobbyist Ordinance," defines a County Lobbyist and imposes certain registration requirements upon individuals meeting the definition. The complete text of the ordinance can be found in Los Angeles County Code, Chapter 2.160. In effect, each person, corporation, or other entity that seeks a County permit, license, franchise, or Contract must certify compliance with the ordinance. As part of this solicitation process, it will be the responsibility of each Proposer to review the ordinance independently as the text of the ordinance is not contained in this RFP. Each person, corporation, or other

entity submitting a response to this solicitation, must certify that each County Lobbyist, as defined by Los Angeles County Code, Section 2.160.010, retained by the Proposer is in full compliance with Chapter 2.160 of the Los Angeles County Code and each County Lobbyist is **not** on the Executive Office's List of Terminated Registered Lobbyist. The Proposer's signature on the Proposal submission is its certification that it is in full compliance with Los Angeles County Code, Chapter 2.160. See Attachment 3 regarding County Lobbyist.

J. Opening of Proposals

Proposals will not be publicly opened.

K. Proposer Debarment

1. The Proposer is hereby notified that, in accordance with Chapter 2.202 of the Los Angeles County Code, the County may debar the Proposer from bidding or proposing on, or being awarded, and/or performing work on other County Contracts for a specified period of time, which generally will not exceed five years but may exceed five years or be permanent if warranted by the circumstance, and the County may terminate any or all of the Proposer's existing Contracts with County, if the Board finds, in its discretion, that the Proposer has done any of the following: (1) violated a term of a Contract with the County or a nonprofit corporation created by the County; (2) committed an act or omission which negatively reflects on the Proposer's quality, fitness, or capacity to perform a Contract with the County or any other public entity, or a nonprofit corporation created by the County or engaged in a pattern or practice which negatively reflects on same; (3) committed an act or offense which indicates a lack of business integrity or business honesty; or (4) made or submitted a false claim against the County or any other public entity.
2. If there is evidence that the highest-rated Proposer may be subject to debarment, Public Works will notify the Proposer in writing of the evidence, which is the basis for the proposed debarment, and will advise the Proposer of the scheduled date for a debarment hearing before the Contractor Hearing Board.
3. The Contractor Hearing Board will conduct a hearing where evidence on the proposed debarment is presented. The Proposer and/or the Proposer's representative shall be given an opportunity to submit evidence at that hearing. After the hearing, the Contractor Hearing Board will prepare a tentative proposed decision, which will contain a recommendation regarding whether the Proposer should be debarred, and, if so, the appropriate length of time of the debarment. The Proposer and Public Works shall be provided an opportunity to object to the tentative proposed decision prior to its presentation to the Board.



4. After consideration of any objections, or if no objections are received, a record of the hearing, the proposed decision, and any other recommendation of the Contractor Hearing Board shall be presented to the Board. The Board shall have the right to modify, deny, or adopt the proposed decision and recommendation of the Contractor Hearing Board.
5. If a Proposer has been debarred for a period longer than five years, that Proposer may, after the debarment has been in effect for at least five years, submit a written request for review of the debarment determination to reduce the period of debarment or terminate the debarment. The County may, in its discretion, reduce the period of debarment or terminate the debarment if it finds that the Proposer has adequately demonstrated one or more of the following: (1) elimination of the grounds for which the debarment was imposed; (2) a bona fide change in ownership or management; (3) material evidence discovered after debarment was imposed; or (4) any other reason that is in the best interests of the County.
6. The Contractor Hearing Board will consider requests for review of a debarment determination only where (1) the Proposer has been debarred for a period longer than five years; (2) the debarment has been in effect for at least five years; and (3) the request is in writing, states one or more of the grounds for reduction of the debarment period or termination of the debarment and includes supporting documentation. Upon receiving an appropriate request, the Contractor Hearing Board will provide notice of the hearing on the request. At the hearing, the Contractor Hearing Board shall conduct a hearing where evidence on the proposed reduction of debarment period or termination of debarment is presented. This hearing shall be conducted and the request for review decided by the Contractor Hearing Board pursuant to the same procedure as for a debarment hearing.
7. The Contractor Hearing Board's proposed decision will contain a recommendation on the request to reduce the period of debarment or terminate the debarment. The Contractor Hearing Board shall present its proposed decision and recommendation to the Board. The Board will have the right to modify, deny, or adopt the proposed decision and recommendation of the Contractor Hearing Board.
8. These terms shall also apply to proposed Subcontractors of Proposer on County Contracts.
9. Attachment 2 is the link to a Listing of Contractors Debarred in Los Angeles County.

L. Proposal Prices and Agreement of Figures

If the total amount arrived at by multiplying the unit price times the quantity does not agree with the total amount entered for the item or if the total amount is not entered, the unit price and the corrected total amount will be considered as representing the Proposer's intentions. If the total amount is entered for the item,

but not the unit price, the unit price will be that which is derived by dividing the total amount proposed for the item by the number of units in the item as representing the Proposer's intentions. If the items are incorrectly calculated, the corrected total will be considered as representing the Proposer's intentions.

M. Proposer's Safety Record

A review of the Proposer's safety record will be made before the award. Proposers are required to submit this information, with their Proposal, on Form PW-4, Contractor's Industrial Safety Record form provided. Nonsubmission or an adverse finding as to the Proposer's safety record may be cause for rejection of the Proposal on the basis of nonresponsibility and/or nonresponsiveness.

N. Qualifications of Proposer

No award will be made to any Proposer who cannot give satisfactory assurance as to its ability to carry out the intended Contract, based both on financial strength and experience as a contractor on work of the nature contemplated in the proposed Contract. Proposers are encouraged to submit records of work of similar nature, size, or extent to that proposed under these specifications and requirements. A reasonable inquiry to determine the responsibility of a Proposer will be conducted. The unreasonable failure of a Proposer to promptly supply information in connection with such inquiry including, but not limited to, information regarding past performance, financial stability, and ability to perform on schedule, may be grounds for a determination of nonresponsibility and/or nonresponsiveness with respect to such Proposer. Unfamiliarity with the type of work required by Public Works may be cause for rejection of the Proposal on the basis of nonresponsibility and/or nonresponsiveness.

O. Qualifications of Subcontractors

Proposers shall list all Subcontractors, if any, to be used on the List of Subcontractors (Form PW-8). The use of Subcontractors shall be subject to Public Works' approval. Subcontractors shall be properly licensed under the laws of the State of California for the type of work, which they are to perform. Alternate Subcontractors shall not be listed for the same work.

P. Safely Surrendered Baby Law

The Proposer shall notify and provide to its employees, and shall require each Subcontractor, if any, to notify and provide to its employees, a fact sheet regarding the Safely Surrendered Baby Law, its implementation in Los Angeles County, and where and how to safely surrender a baby. The fact sheet is set forth in Part II, Exhibit D of this solicitation document and is also available on the Internet at [www.babysafela.org](http://www.babysafela.org) for printing purposes.

Q. Term of Proposals

All proposals shall be firm offers and may not be withdrawn for a period of 270 days following the deadline for submission of proposals.

R. Truth and Accuracy of Representations

False, misleading, incomplete, or deceptively unresponsive statements in connection with a proposal will be sufficient cause for the rejection of the proposal. The evaluation and determination in this area will be at the Director's sole judgment and the Director's judgment will be final.

S. Wages, Materials, and Other Costs

It is the responsibility of the Proposer to calculate the Proposal price to take into consideration a possible escalation of wages, materials, and other costs during the Contract period. The Board, County, Public Works, District(s), or Director make no representations regarding future costs or the rate of wages that may become necessary to pay employees of the Contractor for the work performed during the Contract period.

T. Consultant Independent

Proposers that assisted the County in developing or preparing a solicitation document, pursuant to a consultant Contract, are precluded from subsequently being involved in the bidding process on that solicitation document.

## SECTION 4

### EVALUATION OF PROPOSALS; AWARD AND EXECUTION OF CONTRACT

#### A. Award of Contract

Subject to the right of the Board to make the ultimate decisions concerning the award of Contracts, the County intends to award a Contract to the highest-rated Proposer or Proposers based on the evaluation criteria in Part I, Section 4.E, Evaluation Criteria, whose Proposal(s) provide(s) the most beneficial program and price, with all other factors considered. The County retains the right to select a proposal other than the proposal receiving the highest number of points, if County determines, in its sole discretion, another proposal is the most overall qualified, cost-effective, responsive, responsible, and in the best interest of the County. The recommended awardee shall sign and return the agreement within 14 calendar days of its mailing to the recommended awardee for signature by Public Works. The recommended awardee shall submit copies of its proof of insurance coverage, within 14 days after Board approval of the proposed Contract or at least 14 days prior to the proposed Contract's start date, whichever occurs last. Work under the proposed Contract cannot begin before proof of valid insurance coverage is submitted to Public Works.

#### B. Final Contract Award by Board

Notwithstanding a recommendation by Public Works, the Board retains the right to exercise its judgment concerning the selection of a proposal, the terms of any resultant Contract/agreement, and to determine which proposal best serves the interests of the County. The Board is the ultimate decision-making body and makes the final determinations necessary to arrive at a decision to award, or not award, a Contract, or to award a Contract to a Proposer other than the highest-rated Proposer.

#### C. Evaluation of Proposals

1. All responses to this RFP become the property of the County. Upon receipt of the Proposal as specified and evaluation of Proposals in accordance with the evaluation criteria set forth below, Public Works may recommend the award of a Contract to one or more of those submitting Proposals. The proposed Contract may be submitted to the Board for consideration and possible approval.
2. The County may require whatever evidence it deems necessary to determine the Proposer's overall and specific abilities to meet the requirements of proposed Contract over the entire Contract term. This determination will be based on, but not limited to, an evaluation of the Proposer's experience, personnel, financial stability and resources, work plan, cost to perform requested services, and staffing plan.

3. The County reserves the sole right to judge the Proposer's written and oral representations and to review, evaluate, and select the successful proposal(s).
4. The County may make on-site inspections of Proposer's current jobs and/or facilities.
5. The County, in its sole discretion, may elect to waive any error or informalities in the form of a proposal or any other disparity, if, as a whole, the proposal substantially complies with the RFP's requirements.
6. The County may utilize the services of appropriate experts to assist in the evaluation process.

D. Pass/Fail Review

Proposals will be reviewed on a Pass/Fail basis concerning the items listed below. Proposals not meeting all of these requirements may be rejected as nonresponsive:

1. Proposer will comply with the insurance requirements, outlined in Exhibit B, Section 5, Indemnification and Insurance Requirements, as evidenced by submitting a completed and signed Form PW-16.
2. Proposer and any Subcontractors, if any, have met the GAIN and GROW Programs requirements (Form PW-10).
3. Proposer and any Subcontractors, if any, have completed and submitted the Charitable Contributions Certification (Form PW-12).
4. Proposer and any Subcontractors, if any, have submitted the Jury Service Program Application for Exception and Certification Form (Form PW-3) stating that they accept and will comply with the program requirements or establish their entitlement to an exception to the program.
5. Proposer and Subcontractors, if any, have completed and signed all appropriate forms, and Proposer has completed and signed Form PW-2, Schedule of Prices.
6. Proposer has demonstrated that it complies with all minimum requirements as outlined in Part I, Section 1.B, Minimum Mandatory Requirements, and has submitted a completed and signed Form PW-19.
7. Proposer has submitted copies of the Proposer's managing employee's Weather Modification Association (WMA) certification.

**Proposers who do not possess and/or have not listed Subcontractors who possess the required licenses/certifications/permits at the proposal deadline date will be disqualified as nonresponsive.**

8. Proposer submitted information regarding Experience and Work Plan as outlined in Part I, Section 2.A.
9. Proposer is signed in as attending the Proposers' Conference.
10. Proposal was time stamped by the Cashier prior to the deadline for submission of the Proposal. Any proposal without a Public Works time stamp verifying that the deadline for submission has been met will be rejected.

E. Evaluation Criteria

All proposals will receive a composite score (rating) and be ranked in numerical sequence from high to low based on the following criteria:

1. Proposed Price (30 points)

The proposed price should accurately reflect the Proposer's cost of providing the required products and services and any profit expected during the Contract term. Prior to scoring, the proposed prices must be adjusted in accordance with the Transitional Job Opportunities Preference, the Local Small Business Preference, or the Disabled Veteran Business Enterprise Preference, as applicable.

- Transitional Job Opportunities Preference. To the extent permitted by State and Federal law, should one or more of the Proposers qualify for the Transitional Job Opportunities Preference (Form PW-13), the price component points will be adjusted prior to scoring as follows: 8 percent of the lowest price proposed will be calculated, and that amount will be deducted from the prices submitted by all Proposers who requested and were granted the Transitional Job Opportunities Preference. The Transitional Job Opportunities Preference will not reduce or change the Proposer's payment, which will be based on the Proposer's bid amount.
- Local Small Business Enterprise (SBE) Preference. To the extent permitted by State and Federal law, should one or more of the Proposers qualify for the Local SBE Preference (Form PW-9), the price component points will be adjusted prior to scoring as follows: 8 percent of the lowest price proposed will be calculated, which shall not exceed \$50,000, and that amount will be deducted from the prices submitted by all Local SBE Proposers who requested and were granted the Local SBE Preference. The Local SBE Preference will not reduce or change the Proposer's payment, which is based on the Proposer's bid amount.
- Disabled Veteran Business Enterprise (DVBE) Preference Program. To the extent permitted by State and Federal law, should one or

more of the Proposers qualify for the Disabled Veteran Business Enterprise (DVBE) Preference (Form PW-18), the price component points will be adjusted prior to scoring as follows: 8 percent of the lowest price proposed will be calculated, which shall not exceed \$50,000, and that amount will be deducted from the prices submitted by all DVBE Proposers who requested and were granted the DVBE Preference. The DVBE Preference will not reduce or change the Proposer's payment, which is based on the Proposer's bid amount.

Subject to such adjustment(s), the lowest Total Proposed Annual Price quoted in the Schedule of Prices (Form PW-2) will receive the full weight of this evaluated item. Other Proposals will receive a prorated score calculated as follows: divide the lowest Total Proposed Annual Price by each other Proposer's Total Proposed Annual Price and multiply the result by the maximum possible points for this evaluation criterion. The Proposal with the lowest Total Proposed Annual Price may not necessarily be awarded a contract.

2. Performance History/References (10 points)

a. Potential Points

Public Works will attempt to obtain the required number of Proposer's references for overall satisfaction with Proposer's services, with priority given to services provided in the following order: County of Los Angeles departments, other counties, cities, governmental entities, nonprofit entities, private companies, etc. Proposer may receive up to a maximum of 10/3 points for each responding reference up to a total of three responding references. On Form PW-6, Proposer's Reference List, Proposers must identify all Contracts with the County of Los Angeles during the previous three years and must identify County's Contacts for each Contract. Public Works reserves the right to utilize any reference of Proposer, County or other, listed or not listed. Proposer shall receive zero points for each of the minimum required references not received.

b. Potential Deductions

In addition to the references provided, the review will include the County's Contract Database and Contractor Alert Reporting Database (CARD), if applicable, reflecting past performance history on County or other Contracts. If references fail to substantiate Proposer's description of services provided; references fail to support that Proposer has a continuing pattern of providing capable, productive, and skilled personnel and services; or a significant unacceptable weakness in references may result in a low or zero score. Additionally, a Proposer's unacceptable performance on another County Contract(s), as documented by either the County's

Contract Database or Contractor Alert Reporting Database (CARD) by an unfavorable reference, may result in point deductions up to 100 percent of the total points awarded in this evaluation category. A score of zero in this evaluation category may result in rejection of the Proposal as nonresponsive.

References may be contacted by telephone, facsimile, mail, express delivery, or e-mail. It is the Proposer's responsibility to ensure that accurate and timely contact information is included in the proposal. Public Works will ordinarily not make repeated attempts to contact references and will ordinarily not contact the Proposer to correct bad phone numbers, etc. It is the Proposer's responsibility to ensure that its references respond promptly to Public Works' requests for information.

3. Experience (40 points)

Proposer's experience must comply with all minimum requirements as outlined in Part I, Section 1.B Minimum Requirements. Failure to demonstrate the minimum lengths of experience performing the service may result in rejection of the Proposal as nonresponsive.

The evaluators may award higher points for the higher quality and quantity of experience of the Proposer, its key personnel, and Subcontractors, if any, in providing the requested services to organizations. Greater weight will be given to services provided to agencies of similar size and nature. The evaluators may consider the Proposer's description of its capabilities, resumes of key personnel (Part I, Section 2.A.5), and any other relevant information including, but not limited to, pending litigation and judgments and a review of terminated Contract(s) reported on Form PW-14, Proposer's List of Terminated Contracts. The evaluators may consider the safety record of the Proposer and any Subcontractors to ensure that they have provided services in a safe manner. Significant unacceptable weakness in quality or quantity of experience may result in a low or zero score. A score of zero in this evaluation category may result in rejection of the Proposal as nonresponsive.

4. Work Plan (20 points)

Evaluation and scoring of the Proposer's Work Plan will be based on the extent to which it demonstrates that the Proposer is likely to meet or exceed the performance requirements set forth in Exhibit A, Scope of Work; to demonstrate creativity and innovation that exceed the minimum requirements of the Scope of Work; to render timely and responsive service to Public Works; to respond to contingencies and emergencies; and to provide a professional level of quality in the service and work product. The highest scores will be awarded to the most comprehensive and detailed



work plans that are highly likely to lead the Contractor to exceed minimum work requirements.

The evaluators will award higher scores to work plans that commit to specific staffing levels and staff qualifications that exceed the requirements of the work.

Comprehensiveness of the Work Plan will be evaluated based on detailed, specific discussion of all issues relevant to the work. These may include personnel management, training, subcontracting, recruitment and replacement, supervision, supplies, equipment, identification badges, safety, communications, quality control, and other issues.

The evaluation committee may make these determinations from all relevant information presented in the Proposal, which may include the work plan, staffing plan, quality assurance plan, schedules, and other documents. If an interview or presentation is scheduled, it may also be considered.

The evaluation committee may also make this determination from all relevant information presented in the Proposer's written Quality Assurance Program (Program), which may include, but is not limited to, policies and procedures, inspection fundamentals as well as a description of quality control documentation, review, and reporting. Failure of the Proposer to designate a qualified inspector that will be provided by Proposer to monitor compliance of the Program and deal with customer complaints and inquiries will result in a reduced score in this category. If a Subcontractor is to perform Quality Assurance, the Program must detail how that Subcontractor will interface with the Proposer and comply with the Program.

Significant unacceptable weakness in any of the Work Plan subject areas or omission of a Work Plan from the Proposal at the time of submission may result in a low or zero score. A score of zero in this evaluation category may result in rejection of the Proposal as nonresponsive.

5. Optional Interview/Clarification

The County may, at its option, invite one or more Proposers to make a written or verbal clarification, presentation, and/or participate in an interview before a final selection is made. Evaluation criteria for any additional information provided is the same as that for written Proposals. A separate score will not be given for a presentation or interview, but the Proposer's performance may be considered as part of the overall evaluation. The evaluators may, in their sole discretion, limit the offer to give a presentation or interview, if any, to the one or more Proposers who receive the highest scores in a preliminary scoring of Proposals in accordance with the evaluation criteria set forth in this Part I, Section 4.E, Evaluation Criteria.

6. Additional Criteria

These criteria are not exclusive. The County reserves the right to apply additional evaluation criteria.

F. Negotiation

The County reserves the right to negotiate the terms, conditions, and price of the Proposal, in the sole discretion of the County, to achieve the most beneficial program and price for the County. The County, in its sole discretion, may limit the negotiation, if any, to one or more responsive and responsible Proposers who receive the highest scores in a preliminary scoring of Proposals in accordance with the evaluation criteria set forth in this Part I, Section 4.E, Evaluation Criteria. The negotiation with the Proposer(s) will not result in a change in the rating of the Proposers. If a satisfactory Contract cannot be negotiated, the County may, at its sole discretion, begin Contract negotiations with the next highest-rated Proposer who submitted a proposal, as determined by the County.

## SECTION 5

### PROTEST POLICY

#### A. Protest Policy Review Process

1. Under Board Policy No. 5.055 (Services Contract Solicitation Protest), any prospective Proposer may request a review of the requirements under a solicitation for a Board-approved services Contract, as described in paragraph C, Solicitation Requirements Review, below. Any Proposer may request a review of a disqualification or of a proposed Contract award under such a solicitation, as described respectively in Sections below. Additionally, any Proposer may obtain copies of proposals and Public Works evaluation documents as provided in Part I, Section 3, paragraph H. Under any such review, it is the responsibility of the Proposer challenging the decision of Public Works to demonstrate that Public Works committed a sufficiently material error in the solicitation process to justify invalidation of a solicitation or a proposed Contract award as the case may be.
2. Throughout the review process, the County has no obligation to delay or otherwise postpone an award of Contract based on a Proposer protest. In all cases, the County reserves the right to make an award when it is determined to be in the best interest of the County of Los Angeles to do so.

#### B. Grounds for Review

Unless State or Federal statutes or regulations otherwise provide, the grounds for review of a solicitation for Board-approved services Contract provided for under Board Policy No. 5.055 (Services Contract Solicitation Protest) are limited to the following:

- Review of the Solicitation Requirements
- Review of a Disqualified Bid/Proposal
- Review of the Proposed Contractor Selection

#### C. Solicitation Requirements Review

Any person or entity may seek a Solicitation Requirements Review by submitting a written request for review to Public Works conducting the solicitation as described in this paragraph. A Request for a Solicitation Requirements Review may be denied, in Public Works' sole discretion, if the request does not satisfy all of the following criteria:

1. The request for a Solicitation Requirements Review is made within ten business days of the issuance of the solicitation document.

2. The request for a Solicitation Requirements Review includes documentation, which demonstrates the underlying ability of the person or entity to submit a proposal.
3. The request for a Solicitation Requirements Review itemizes in appropriate detail, each matter contested and factual reasons for the requested review.
4. The request for a Solicitation Requirements Review asserts either that:
  - a. Application of the minimum requirements, evaluation criteria, and/or business requirements unfairly disadvantages the person or entity; or,
  - b. Due to unclear instructions, the process may result in the County not receiving the best possible responses from prospective Proposers.
5. The Solicitation Requirements Review will be completed and Public Works' determination will be provided to the requesting person or entity, in writing, within a reasonable time prior to the bid/proposal due date.

D. Place to Submit Requests for Review

All Requests for Review shall be submitted to the Contract Analyst.

E. Disqualification Review

1. A bid/proposal may be disqualified from consideration because Public Works determined it was nonresponsive at any time during the review/evaluation process. If Public Works determines that a bid/proposal is disqualified due to nonresponsiveness, Public Works shall notify the Proposer in writing.
2. Upon receipt of the written determination of nonresponsiveness, the Proposer may submit a written request for a Disqualification Review within the time frame specified in the written determination.
3. A request for a Disqualification Review may, in Public Works' sole discretion, be denied if the request does not satisfy all of the following criteria:
  - a. The person or entity requesting a Disqualification Review is a Proposer.
  - b. The request for a Disqualification Review is submitted timely (i.e., by the date and time specified in the written determination).
  - c. The request for a Disqualification Review asserts that the determination of disqualification due to bid/proposal nonresponsiveness was erroneous (e.g., factual errors, etc.) and provides factual support on each ground asserted as well as copies of all documents and other material that support the assertions.

4. The Disqualification Review shall be completed and the determination shall be provided to the requesting Proposer, in writing, prior to the conclusion of the evaluation process.

F. Debriefing Process

For solicitations where proposals are evaluated and scored in accordance to Section 4, Evaluation of Proposals, the following provisions shall apply:

1. Upon completion of the evaluation, Public Works will notify the remaining Proposers in writing that Public Works is entering negotiations with another Proposer. Upon receipt of the letter, any nonselected Proposer may submit a written request for a Debriefing within the time frame specified in the letter. A request for a Debriefing may, in Public Works' sole discretion, be denied if the request is not received within the specified time frame.
2. The purpose of the Debriefing is to compare the requesting Proposer's response to the solicitation document with the evaluation document. The requesting Proposer shall be debriefed only on its response. Because Contract negotiations are not yet complete, responses from other Proposers shall not be discussed, although Public Works may inform the requesting Proposer of its relative ranking.
3. During or following the Debriefing, Public Works will instruct the requesting Proposer of the manner and time frame in which the requesting Proposer must notify Public Works of its intent to request a Proposed Contractor Selection Review, below, if the requesting Proposer is not satisfied with the results of the Debriefing.

G. Proposed Contractor Selection Review

Any Proposer that has timely submitted a notice of its intent to request a Proposed Contractor Selection Review as described in paragraph F, above, may submit a written request for a Proposed Contractor Selection Review in the manner and time frame as specified by Public Works. For low-bid solicitations, where applicable, upon selection of the lowest-cost, responsive, and responsible bidder, Public Works will notify the remaining bidders in writing that Public Works is entering negotiations with another bidder. Public Works will instruct the remaining bidders of the manner and time frame in which each remaining bidder must notify Public Works of its intent to request a Proposed Contractor Selection Review, should such remaining bidder desire to have such a review performed.

A request for a Proposed Contractor Selection Review may, in Public Works' sole discretion, be denied if the request does not satisfy all of the following criteria:

1. The person or entity requesting a Proposed Contractor Selection Review is a Proposer.

2. The request for a Proposed Contractor Selection Review is submitted timely (i.e., by the date and time specified by Public Works).
3. The person or entity requesting a Proposed Contractor Selection Review asserts in appropriate detail with factual reasons one or more of the following grounds for review:
  - a. Public Works materially failed to follow procedures specified in its solicitation document. This includes:
    - i. Failure to correctly apply the standards for reviewing the proposal format requirements.
    - ii. Failure to correctly apply the standards, and/or follow the prescribed methods, for evaluating the proposals as specified in the solicitation document.
    - iii. Use of evaluation criteria that were different from the evaluation criteria disclosed in the solicitation document.
  - b. Public Works made identifiable mathematical or other errors in evaluating bids/proposals, resulting in the Proposer receiving an incorrect score, and not being selected as the recommended Contractor.
  - c. For applicable solicitations where responses are evaluated and scored, a member of the Evaluation Committee demonstrated bias in the conduct of the evaluation.
  - d. Another basis for review as provided by State or Federal law.
4. The request for a Proposed Contractor Selection Review sets forth sufficient detail to demonstrate that, but for Public Works' alleged failure, the Proposer would have been the lowest-cost, responsive, and responsible bid or the highest-scored proposal, as the case may be.

Upon completing the Proposed Contractor Selection Review, Public Works representative shall issue a written decision to the Proposer within a reasonable time following receipt of the request for a Proposed Contractor Selection Review, and always before the date the Contract award recommendation is to be heard by the Board. The written decision shall additionally instruct the Proposer of the manner and time frame for requesting a review by a County Independent Review, paragraph H, below.

#### H. County Independent Review Process

1. Any Proposer that is not satisfied with the results of the Proposed Contractor Selection Review may submit a written request for a County Independent Review in the manner and time frame specified by

Public Works in Public Works' written decision regarding the Proposed Contractor Selection Review.

2. A request for a County Independent Review may, in the County's sole discretion, be denied if the request does not satisfy all of the following criteria:
  - a. The person or entity requesting review by a County Independent Review is a Proposer.
  - b. The request for a review by a County Independent Review is submitted timely (i.e., by the date and time specified by Public Works).
  - c. The person or entity requesting review by a County Independent Review has limited the request to items raised in the Proposed Contractor Selection Review and new items that (a) arise from Public Works' written decision and (b) are one of the appropriate grounds for requesting a Proposed Contractor Selection Review as listed in paragraph G above.
3. Upon completion of the County Independent Review's, Internal Services Department will forward its report to Public Works, which will provide a copy to the Proposer.

## **TABLE OF FORMS**

PW-1	VERIFICATION OF PROPOSAL
PW-2	SCHEDULE OF PRICES
PW-3	COUNTY OF LOS ANGELES CONTRACTOR EMPLOYEE JURY SERVICE PROGRAM APPLICATION FOR EXCEPTION AND CERTIFICATION FORM
PW-4	CONTRACTOR'S INDUSTRIAL SAFETY RECORD
PW-5	CONFLICT OF INTEREST CERTIFICATION
PW-6	PROPOSER'S REFERENCE LIST
PW-7	PROPOSER'S EQUAL EMPLOYMENT OPPORTUNITY CERTIFICATION
PW-8	LIST OF SUBCONTRACTORS
PW-9	REQUEST FOR LOCAL SMALL BUSINESS ENTERPRISE (SBE) PREFERENCE PROGRAM CONSIDERATION AND CBE FIRM/ORGANIZATION INFORMATION FORM
PW-10	GAIN AND GROW EMPLOYMENT COMMITMENT
PW-11	TRANSMITTAL FORM TO REQUEST AN RFP SOLICITATION REQUIREMENTS REVIEW (Submit only if requesting a review.)
PW-12	CHARITABLE CONTRIBUTIONS CERTIFICATION
PW-13	TRANSITIONAL JOB OPPORTUNITIES PREFERENCE APPLICATION
PW-14	PROPOSER'S LIST OF TERMINATED CONTRACTS
PW-15	PROPOSER'S PENDING LITIGATIONS AND JUDGMENTS
PW-16	PROPOSER'S INSURANCE COMPLIANCE AFFIRMATION
PW-17	CERTIFICATION OF COMPLIANCE WITH THE COUNTY'S DEFAULTED PROPERTY TAX REDUCTION PROGRAM
PW-18	REQUEST FOR DISABLED VETERAN BUSINESS ENTERPRISE (DVBE) PREFERENCE PROGRAM CONSIDERATION FORM
PW-19	PROPOSER'S COMPLIANCE WITH THE MINIMUM REQUIREMENTS OF THE RFP

## **ATTACHMENTS**

1. COUNTY OF LOS ANGELES POLICY ON DOING BUSINESS WITH SMALL BUSINESS
2. DEBARRED VENDORS REPORT
3. COUNTY OF LOS ANGELES LOBBYIST ORDINANCE



## VERIFICATION OF PROPOSAL

<b>DATE:</b> _____, 201		<b>THE UNDERSIGNED HEREBY DECLARES AS FOLLOWS:</b>	
1. This Declaration is given in support of a Proposal for a Contract with The County of Los Angeles. The Proposer further acknowledges that if any false, misleading, incomplete, or deceptively unresponsive statements in connection with this proposal are made, the Proposal may be rejected at the Director's sole judgment and his/her judgment shall be final.			
2. Name of Service: _____			
<b>DECLARANT INFORMATION</b>			
3. Name Of declarant: _____			
4. I Am duly vested with the authority to make and sign instruments for and on behalf of the Proposer(s).			
5. My Title, Capacity, Or Relationship to the Proposer(s) is: _____			
<b>PROPOSER INFORMATION</b>			
6. Proposer's full legal name: _____		Telephone No.: _____	
Physical Address (NO P.O. BOX): _____		Mobile No.: _____	
e-mail: _____		Fax No.: _____	
County WebVen No.: _____	IRS No.: _____	Business License No.: _____	
7. Proposer's fictitious business name(s) or dba(s) (if any): _____			
County(s) of Registration: _____		State: _____	Year(s) became DBA: _____
8. The Proposer's form of business entity is (CHECK ONLY ONE):			
<input type="checkbox"/> Sole proprietor	Name of Proprietor: _____		
<input type="checkbox"/> A corporation:	Corporation's principal place of business: _____		
	State of incorporation: _____		Year incorporated: _____
<input type="checkbox"/> Non-profit corporation certified under IRS 501(c) 3 and registered with the CA Attorney General's Registry of Charitable Trusts	President/CEO: _____		
	Secretary: _____		
<input type="checkbox"/> A general partnership:	Names of partners: _____		
<input type="checkbox"/> A limited partnership:	Name of general partner: _____		
<input type="checkbox"/> A joint venture of:	Names of joint venturers: _____		
<input type="checkbox"/> A limited liability company:	Name of managing member: _____		
9. The only persons or firms interested in this proposal as principals are the following:			
Name(s)	Title	Phone	Fax
Street	City	State	Zip
Name(s)	Title	Phone	Fax
Street	City	State	Zip
10. Is your firm wholly or majority owned by, or a subsidiary of another firm? <input type="checkbox"/> No <input type="checkbox"/> Yes If yes, name of parent firm: _____ State of incorporation/registration of parent firm: _____			
11. Has your firm done business under any other name(s) within the last five years? <input type="checkbox"/> No <input type="checkbox"/> Yes If yes, please list the other name(s): Name(s): _____ Year of name change: _____ Name(s): _____ Year of name change: _____			
12. Is your firm involved in any pending acquisition or merger? <input type="checkbox"/> No <input type="checkbox"/> Yes If yes, indicate the associated company's name: _____			
13. Proposer acknowledges that if any false, misleading, incomplete, or deceptively unresponsive statements in connection with this proposal are made, the proposal may be rejected. The evaluation and determination in this area shall be at the Director's sole judgment and the Director's judgment shall be final.			
14. I am making these representations and all representation contained in this proposal based on information that they are true and correct to the best of my information and belief.			
I declare under penalty of perjury under the laws of California that the above information is true and correct.			
Signature of Proposer or Authorized Agent: _____			Date: _____
Type name and title: _____			

**SCHEDULE OF PRICES FOR  
AS-NEEDED WEATHER MODIFICATION  
(CLOUD SEEDING) SERVICES (2015-AN013)**

The undersigned Proposer offers to perform the work described in the Request for Proposals (RFP) for the following prices. The Proposer's rates shall include all administrative costs, supervision, labor, materials, transportation, taxes, equipment and supplies unless stated otherwise in the RFP. It is understood and agreed that where quantities, if any, are set forth in the Schedule of Prices, they are only estimates, and the unit prices quoted, if any, will apply to the actual quantities, whatever they may be. Notwithstanding the amounts of compensation quoted in the Schedule of Prices, Public Works and the Contractor may agree in writing that specified tasks or deliverables may be compensated at a lower rate than the amount quoted, as a result of savings realized in the performance of the work. Should the Contractor perform any task for a lower price than originally agreed, or should any task be curtailed, resulting in a surplus in the funds encumbered for the work, Public Works may direct the application of any surplus to increase the quality or quantity of any other tasks provided for in the Schedule of Prices, Form PW-2. However, such reallocation of funds is permitted only with the written approval of Public Works.

**TASK A**

TASK	ITEM DESCRIPTION	UNIT	UNIT COST	NO. OF UNITS	TOTAL ANNUAL PROPOSED PRICE (Unit cost x No. of units)
A.1.a	<u>Cloud Seeding Development:</u> Evaluate Locations	HOUR	\$	60	\$
A.1.g	<u>Cloud Seeding Development:</u> Draft Cloud Seeding Report	EACH	\$	1	\$
A.1.g	<u>Cloud Seeding Development:</u> Final Cloud Seeding Report	EACH	\$	1	\$
A.2.d	<u>Implementation:</u> Flare Unit Fabrication	EACH	\$	4	\$
A.2.d	<u>Implementation:</u> Flare Unit Installation	EACH	\$	4	\$
A.2.d	<u>Implementation:</u> Manual Unit Installation	EACH	\$	6	\$
A.1.k.v.(7)	<u>Operation:</u> Equipment Removal and Storage	EACH	\$	10	\$
<b>TASK A - SUBTOTAL</b>					<b>\$</b>

**SCHEDULE OF PRICES FOR  
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A.2.d	<u>Implementation:</u> Flare Unit Fabrication	EACH	\$	4	\$
A.2.d	<u>Implementation:</u> Flare Unit Installation	EACH	\$	4	\$
A.2.d	<u>Implementation:</u> Manual Unit Installation	EACH	\$	6	\$
A.1.k.v.(7)	<u>Operation:</u> Equipment Removal and Storage	EACH	\$	10	\$
<b>TASK A - SUBTOTAL</b>					<b>\$</b>

**SCHEDULE OF PRICES FOR  
AS-NEEDED WEATHER MODIFICATION  
(CLOUD SEEDING) SERVICES (2015-AN013)**

**TASK B**

TASK	ITEM DESCRIPTION	UNIT	UNIT COST	NO. OF UNITS	TOTAL ANNUAL PROPOSED PRICE (Unit cost x No. of units)
B	Operation: Flare Unit Direct Costs	MONTH	\$	4	\$
B	Operation: Manual Unit Direct Costs	MONTH	\$	6	\$
B.3.f	Operation: Flares	EACH	\$	500	\$
B.3.f	Operation: Manual Silver Iodide Usage	HOUR	\$	2400	\$
<b>TASK B - SUBTOTAL</b>					<b>\$</b>

**TASK C**

TASK	ITEM DESCRIPTION	UNIT	UNIT COST	NO. OF UNITS	TOTAL ANNUAL PROPOSED PRICE (Unit cost x No. of units)
C.1.a	Documentation: Monthly Reports	EACH	\$	6	\$
C.2.a	Documentation: Draft Annual Report	EACH	\$	1	\$
C.2.a	Documentation: Final Annual Report	EACH	\$	1	\$
<b>SUBTOTAL TASK C</b>					<b>\$</b>
<b>TOTAL ANNUAL PROPOSED PRICES (A+B+C)</b>					<b>\$</b>

LEGAL NAME OF PROPOSER		
SIGNATURE OF PERSON AUTHORIZED TO SUBMIT PROPOSAL		
TITLE OF AUTHORIZED PERSON		
DATE	STATE CONTRACTOR'S LICENSE NUMBER	LICENSE TYPE
PROPOSER'S ADDRESS:		
PHONE	FACSIMILE	E-MAIL

**COUNTY OF LOS ANGELES CONTRACTOR EMPLOYEE JURY SERVICE PROGRAM  
APPLICATION FOR EXCEPTION AND CERTIFICATION FORM**

This contract is subject to the County of Los Angeles Contractor Employee Jury Service Program (Program) (Los Angeles County Code, Chapter 2.203). All contractors and subcontractors must complete this form to either (1) request an exception from the Program requirements or (2) certify compliance. Upon review of the submitted form, the County department will determine, in its sole discretion, whether the bidder or proposer is excepted from the Program.

Company Name:		
Company Address:		
City:	State:	Zip Code:
Telephone Number:		
(Type of Goods or Services):		

**If you believe the Jury Service Program does not apply to your business, check the appropriate box in Part I (you must attach documentation to support your claim). If the Jury Service Program applies to your business, complete Part II to certify compliance with the Program. Whether you complete Part I or Part II, sign and date this form.**

**Part I: Jury Service Program Is Not Applicable to My Business**

☐ My business does not meet the definition of "contractor," as defined in the Program as it has not received an aggregate sum of \$50,000 or more in any 12-month period under one or more County contracts or subcontracts (this exception is not available if the contract/purchase order itself will exceed \$50,000). I understand that the exception will be lost, and I must comply with the Program if my revenues from the County exceed an aggregate sum of \$50,000 in any 12-month period.

☐ My business is a small business as defined in the Program. It 1) has ten or fewer employees; and, 2) has annual gross revenues in the preceding twelve months which, if added to the annual amount of this contract, are \$500,000 or less; and, 3) is not an affiliate or subsidiary of a business dominant in its field of operation, as defined below. I understand that the exemption will be lost, and I must comply with the Program if the number of employees in my business and my gross annual revenues exceed the above limits.

"Dominant in its field of operation" means having more than ten employees, including full-time and part-time employees, and annual gross revenues in the preceding twelve months, which, if added to the annual amount of the contract awarded, exceed \$500,000.

"Affiliate or subsidiary of a business dominant in its field of operation" means a business which is at least 20 percent owned by a business dominant in its field of operation, or by partners, officers, directors, majority stockholders, or their equivalent, of a business dominant in that field of operation.

☐ My business is subject to a Collective Bargaining Agreement that expressly provides that it supersedes all provisions of the Program. **ATTACH THE AGREEMENT.**

**Part II: Certification of Compliance**

☐ My business has and adheres to a written policy that provides, on an annual basis, no less than five days of regular pay for actual jury service for full-time employees of the business who are also California residents, or my company will have and adhere to such a policy prior to award of the contract.

**I declare under penalty of perjury under the laws of the State of California that the information stated above is true and correct.**

Print Name:	Title:
Signature:	Date:

## CONTRACTOR'S INDUSTRIAL SAFETY RECORD

PROPOSED CONTRACT FOR: \_\_\_\_\_  
 SERVICE BY PROPOSER \_\_\_\_\_  
 PROPOSAL DATE: \_\_\_\_\_

This information must include all work undertaken in the State of California by the proposer and any partnership, joint venture, or corporation that any principal of the proposer participated in as a principal or owner for the last five calendar years and the current calendar year prior to the date of proposal submittal. Separate information shall be submitted for each particular partnership, joint venture, corporate, or individual proposer. The proposer may attach any additional information or explanation of date which the proposer would like taken into consideration in evaluating the safety record. An explanation must be attached to the circumstances surrounding any and all fatalities.

5 CALENDAR YEARS PRIOR TO CURRENT YEAR

	2010	2011	2012	2013	2014	Total	Current Year to Date
1. Number of contracts.							
2. Total dollar amount of Contracts (in thousands of dollars).							
3. Number of fatalities.							
4. Number of lost workday cases.							
5. Number of lost workday cases involving permanent transfer to another job or termination of employment.							
6. Number of lost workdays.							

The above information was compiled from the records that are available to me at this time, and I declare under penalty of perjury that the information is true and accurate within the limitations of those records.

\_\_\_\_\_  
 Name of Proposer or Authorized Agent (print)

\_\_\_\_\_  
 Signature

\_\_\_\_\_  
 Date

## CONFLICT OF INTEREST CERTIFICATION

I, \_\_\_\_\_

- ☐ sole owner  
☐ general partner  
☐ managing member  
☐ President, Secretary, or other proper title) \_\_\_\_\_

 of \_\_\_\_\_  
 Name of proposer

make this certification in support of a proposal for a contract with the County of Los Angeles for services within the scope of Los Angeles County Code, Section 2.180.010, which provides as follows:

**Contracts Prohibited.** A. Notwithstanding any other section of this code, the county shall not contract with, and shall reject any bid or proposal submitted by, the persons or entities specified below, unless the board of supervisors finds that special circumstances exist which justify the approval of such contract.

1. Employees of the county or of public agencies for which the board of supervisors is the governing body;
2. Profit-making firms or businesses in which employees described in subdivision 1 of subsection A serve as officers, principals, partners, or major shareholders;
3. Persons who, within the immediately preceding 12 months, came within the provisions of subdivision 1 of subsection A, and who:
  - (a) Were employed in positions of substantial responsibility in the area of service to be performed by the contract; or
  - (b) Participated in any way in developing the contract of its service specifications; and
4. Profit-making firms or businesses in which the former employees described in subdivision 3 of subsection A, serve as officers, principals, partners, or major shareholders.

I hereby certify I am informed and believe that personnel who developed and/or participated in the preparation of this contract do not fall within scope of the Los Angeles County Code, Section 2.180.010 as cited above. Furthermore, that no County employee whose position in the County enables him/her to influence the award of this contract, or any competing contract, and no spouse or economic dependent of such employee is or shall be employed in any capacity by the Contractor herein, or has or shall have any direct or indirect financial interest in this contract. I understand and agree that any falsification in this Certificate will be grounds for rejection of this Proposal and cancellation of any contract awarded pursuant to this Proposal.

I certify under penalty of perjury under the laws of California that the foregoing is true and correct.

Signed \_\_\_\_\_

Date \_\_\_\_\_

## PROPOSER'S REFERENCE LIST

PROPOSER NAME: \_\_\_\_\_

PROPOSED CONTRACT FOR: \_\_\_\_\_

Provide a comprehensive reference list of all contracts for goods and/or services provided by the Proposer during the previous three years. Please verify all contact names, telephone and fax numbers, and e-mail addresses before listing. Incorrect names, telephone and/or fax numbers, or e-mail addresses will be disregarded. Use additional pages if required.

**A. COUNTY OF LOS ANGELES AGENCIES****All contracts with the County during the previous three years must be listed.**

SERVICE:	SERVICE DATES:
DEPT/ DISTRICT:	
CONTACT:	
TELEPHONE:	
FAX:	
E-MAIL:	

SERVICE:	SERVICE DATES:
DEPT/DISTRICT:	
CONTACT:	
TELEPHONE:	
FAX:	
E-MAIL:	

SERVICE:	SERVICE DATES:
DEPT/ DISTRICT:	
CONTACT:	
TELEPHONE:	
FAX:	
E-MAIL:	

SERVICE:	SERVICE DATES:
DEPT/DISTRICT:	
CONTACT:	
TELEPHONE:	
FAX:	
E-MAIL:	

**B. OTHER GOVERNMENTAL AGENCIES AND PRIVATE COMPANIES**

SERVICE:	SERVICE DATES:
AGENCY/ FIRM:	
ADDRESS:	
CONTACT:	
TELEPHONE:	
FAX:	
E-MAIL:	

SERVICE:	SERVICE DATES:
AGENCY/ FIRM:	
ADDRESS:	
CONTACT:	
TELEPHONE:	
FAX:	
E-MAIL:	

SERVICE:	SERVICE DATES:
AGENCY/ FIRM:	
ADDRESS:	
CONTACT:	
TELEPHONE:	
FAX:	
E-MAIL:	

SERVICE:	SERVICE DATES:
AGENCY/ FIRM:	
ADDRESS:	
CONTACT:	
TELEPHONE:	
FAX:	
E-MAIL:	



## PROPOSER'S EQUAL EMPLOYMENT OPPORTUNITY CERTIFICATION

Proposer's Name
Address
Internal Revenue Service Employer Identification Number

In accordance with Los Angeles County Code, Section 4.32.010, the Proposer certifies and agrees that all persons employed by it, its affiliates, subsidiaries, or holding companies are and will be treated equally by the firm without regard to or because of race, religion, ancestry, national origin, or sex and in compliance with all anti-discrimination laws of the United States of America and the State of California.

1.	The proposer has a written policy statement prohibiting any discrimination in all phases of employment.	<input type="checkbox"/> YES <input type="checkbox"/> NO
2.	The proposer periodically conducts a self-analysis or utilization analysis of its work force.	<input type="checkbox"/> YES <input type="checkbox"/> NO
3.	The proposer has a system for determining if its employment practices are discriminatory against protected groups.	<input type="checkbox"/> YES <input type="checkbox"/> NO
4.	Where problem areas are identified in employment practices, the proposer has a system for taking reasonable corrective action to include establishment of goals and timetables.	<input type="checkbox"/> YES <input type="checkbox"/> NO

Proposer	
Authorized representative	
Signature	Date



**County of Los Angeles**  
**Request for Local Small Business Enterprise (SBE) Preference Program Consideration and**  
**CBE Firm/Organization Information Form**

All proposers responding to the Request for Proposals must complete and return this form for proper consideration of the proposal.

FIRM NAME:

My County (WebVen) Vendor Number:

**I. LOCAL SMALL BUSINESS ENTERPRISE PREFERENCE PROGRAM:**

☐ As Local SBE, certified by the County of Los Angeles, Internal Services Department, I request this proposal/bid be considered for the Local SBE Preference.

☐ Attached is a copy of Local SBE certification issued by the County.

**II. FIRM/ORGANIZATION INFORMATION:** The information requested below is for statistical purposes only. On final analysis and consideration of award, contractor/vendor will be selected without regard to race/ethnicity, color, religion, sex, national origin, age, sexual orientation, or disability.

<b>Business Structure:</b>	<input type="checkbox"/> Sole Proprietorship	<input type="checkbox"/> Partnership	<input type="checkbox"/> Corporation	<input type="checkbox"/> Nonprofit	<input type="checkbox"/> Franchise
<input type="checkbox"/> Other (Please Specify):					
<b>Total Number of Employees</b> (including owners):					
<b>Race/Ethnic Composition of Firm.</b> Please distribute the above total number of individuals into the following categories:					
Race/Ethnic Composition	Owners/Partners/ Associate Partners		Managers		Staff
	Male	Female	Male	Female	Male      Female
Black/African American					
Hispanic/Latino					
Asian or Pacific Islander					
American Indian					
Filipino					
White					

**III. PERCENTAGE OF OWNERSHIP IN FIRM:** Please indicate by percentage (%) how ownership of the firm is distributed.

	Black/African American	Hispanic/ Latino	Asian or Pacific Islander	American Indian	Filipino	White
Men	%	%	%	%	%	%
Women	%	%	%	%	%	%

**IV. CERTIFICATION AS MINORITY, WOMEN, DISADVANTAGED, AND DISABLED VETERAN BUSINESS ENTERPRISES:** If your firm is currently certified as a minority, women, disadvantaged or disabled veteran owned business enterprise by a public agency, complete the following and attach a copy of your proof of certification. (Use back of form, if necessary.)

Agency Name	Minority	Women	Disadvantaged	Disabled Veteran	Expiration Date

**V. DECLARATION:** I DECLARE UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE STATE OF CALIFORNIA THAT THE ABOVE INFORMATION IS TRUE AND CORRECT.

Authorized Signature:	Title:	Date:
-----------------------	--------	-------

**GAIN and GROW EMPLOYMENT COMMITMENT**

As a threshold requirement for consideration for contract award, Proposer shall demonstrate a proven record for hiring GAIN/GROW participants or shall attest to a willingness to consider GAIN/GROW participants for any future employment opening if they meet the minimum qualifications for that opening. Additionally, Proposer shall attest to a willingness to provide employed GAIN/GROW participants access to the Proposer's employee mentoring program, if available, to assist these individuals in obtaining permanent employment and/or promotional opportunities.

To report all job openings with job requirements to obtain qualified GAIN/GROW participants as potential employment candidates, Contractor shall email: [GAINGROW@dpss.lacounty.gov](mailto:GAINGROW@dpss.lacounty.gov).

**Proposers unable to meet this requirement shall not be considered for contract award.**

Proposer shall complete all of the following information, sign where indicated below, and return this form with their proposal.

A. Proposer has a proven record of hiring GAIN/GROW participants.

\_\_\_\_\_ YES (subject to verification by County) \_\_\_\_\_ NO

B. Proposer is willing to provide DPSS with all job openings and job requirements to consider GAIN/GROW participants for any future employment openings if the GAIN/GROW participant meets the minimum qualifications for the opening. "Consider" means that Proposer is willing to interview qualified GAIN/GROW participants.

\_\_\_\_\_ YES \_\_\_\_\_ NO

C. Proposer is willing to provide employed GAIN/GROW participants access to its employee-mentoring program, if available.

\_\_\_\_\_ YES \_\_\_\_\_ NO \_\_\_\_\_ N/A (Program not available)

Signature	Title
Firm Name	Date

## TRANSMITTAL FORM TO REQUEST AN RFP SOLICITATION REQUIREMENTS REVIEW

***A Solicitation Requirements Review must be received by the County  
within ten business days of issuance of the solicitation document***

Proposer Name:	Date of Request:
Project Title:	Project No.

A **Solicitation Requirements Review** is being requested because the Proposer asserts that they are being unfairly disadvantaged for the following reason(s): *(check all that apply)*

- ☐ Application of **Minimum Requirements**
- ☐ Application of **Evaluation Criteria**
- ☐ Application of **Business Requirements**
- ☐ Due to **unclear instructions**, the process may result in the County not receiving the best possible responses

I understand that this request must be received by the County within **ten business days** of issuance of the solicitation document.

For each area contested, Proposer must explain in detail the factual reasons for the requested review.  
*(Attach additional pages and supporting documentation as necessary.)*

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Request submitted by:

\_\_\_\_\_  
*(Name)*

\_\_\_\_\_  
*(Title)*

***For County use only***

Date Transmittal Received by County: _____	Date Solicitation Released: _____
Reviewed by: _____	
Results of Review - Comments: _____ _____ _____ _____	
Date Response sent to Proposer: _____	

**CHARITABLE CONTRIBUTIONS CERTIFICATION**


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 Company Name

---

 Address

---

 Internal Revenue Service Employer Identification Number

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 California Registry of Charitable Trusts "CT" number (if applicable)

The Nonprofit Integrity Act (SB 1262, Chapter 919) added requirements to California's Supervision of Trustees and Fundraisers for Charitable Purposes Act, which regulates those receiving and raising charitable contributions.

**CERTIFICATION****YES****NO**

Proposer or Contractor has examined its activities and determined that it does not now receive or raise charitable contributions regulated under California's Supervision of Trustees and Fundraisers for Charitable Purposes Act. If Proposer engages in activities subjecting it to those laws during the term of a County contract, it will timely comply with them and provide County a copy of its initial registration with the California State Attorney General's Registry of Charitable Trusts when filed.

( )

( )

**OR****YES****NO**

Proposer or Contractor is registered with the California Registry of Charitable Trusts under the CT number listed above and is in compliance with its registration and reporting requirements under California law. Attached is a copy of its most recent filing with the Registry of Charitable Trusts as required by Title 11 California Code of Regulations, sections 300-301 and Government Code sections 12585-12586.

( )

( )

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 Signature

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 Date

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 Name and Title (please type or print)

## TRANSITIONAL JOB OPPORTUNITIES PREFERENCE APPLICATION

COMPANY NAME:		
COMPANY ADDRESS:		
CITY:	STATE:	ZIP CODE:

- ☐ I am not requesting consideration under the County's Transitional Job Opportunities Preference Program.

**I hereby certify that I meet all the requirements for this program:**

- ☐ My business is a non-profit corporation qualified under Internal Revenue Services Code - Section 501(c)(3) and has been such for three years (*attach IRS Determination Letter*).
- ☐ I have submitted my three most recent annual tax returns with my application.
- ☐ I have been in operation for at least one year providing transitional job and related supportive services to program participants.
- ☐ I have submitted a profile of our program; including a description of its components designed to help the program participants, number of past program participants, and any other information requested by the contracting department.

**I declare under penalty of perjury under the laws of the State of California that the information herein is true and correct.**

PRINT NAME:	TITLE:
SIGNATURE:	DATE:

**REVIEWED BY COUNTY:**

SIGNATURE OF REVIEWER	APPROVED	DISAPPROVED	DATE

## PROPOSER'S LIST OF TERMINATED CONTRACTS

PROPOSER'S NAME: \_\_\_\_\_

☐ Proposer has not had any contracts terminated in the past three years.

Proposer must list all contracts that have been terminated within the past three years. Terminated contracts are those contracts terminated by an agency or firm before the contract's expiration date. If a contract(s) was terminated, please attach an explanation on a separate sheet, whether the termination was at the fault of the Proposer or not. Any and all terminated contracts should be accompanied with an explanation. It should be noted that contracts that naturally expired need not be listed. The County is only seeking information on contracts that were terminated prior to expiration.

SERVICE:	TERMINATING DATE:
NAME OF TERMINATING FIRM	
ADDRESS OF FIRM	
CONTACT PERSON:	
TELEPHONE:	
FAX:	
E-MAIL:	

SERVICE:	TERMINATING DATE:
NAME OF TERMINATING FIRM	
ADDRESS OF FIRM	
CONTACT PERSON:	
TELEPHONE:	
FAX:	
E-MAIL:	

SERVICE:	TERMINATING DATE:
NAME OF TERMINATING FIRM	
ADDRESS OF FIRM	
CONTACT PERSON:	
TELEPHONE:	
FAX:	
E-MAIL:	

SERVICE:	TERMINATING DATE:
NAME OF TERMINATING FIRM	
ADDRESS OF FIRM	
CONTACT PERSON:	
TELEPHONE:	
FAX:	
E-MAIL:	

SIGNATURE \_\_\_\_\_

DATE: \_\_\_\_\_



**PROPOSER'S PENDING LITIGATIONS AND JUDGMENTS**

Proposer's Name: \_\_\_\_\_

- ☐ Proposer and/or principals are **not** currently involved in any pending litigation; are not aware of any threatened litigation where they would be a party; and have not had any judgments entered against them within the last five years as of the date of proposal submission.

Proposer and/or principals of the Proposer must list below (use additional pages if necessary) all pending litigation, threatened litigation, and/or any judgments entered against them within the last five years as of the date of proposal submission.

A. ☐ Pending Litigation      ☐ Threatened Litigation      ☐ Judgment (check one)

1. Against ☐ Proposer; ☐ Principal; ☐ Both (check as appropriate)
2. Name of Litigation/Judgment: \_\_\_\_\_
3. Case Number: \_\_\_\_\_
4. Court of Jurisdiction: \_\_\_\_\_
5. Please provide a statement describing the size and scope of the pending/threatened litigation or judgment (use additional page if necessary):

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B. ☐ Pending Litigation      ☐ Threatened Litigation      ☐ Judgment (check one)

1. Against ☐ Proposer; ☐ Principal; ☐ Both (check as appropriate)
2. Name of Litigation/Judgment: \_\_\_\_\_
3. Case Number: \_\_\_\_\_
4. Court of Jurisdiction: \_\_\_\_\_
5. Please provide a statement describing the size and scope of the pending/threatened litigation or judgment (use additional page if necessary):

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Signature of Proposer: \_\_\_\_\_ Date: \_\_\_\_\_

AS-NEEDED WEATHER MODIFICATION (CLOUD SEEDING) SERVICES  
(2015-AN013)

PROPOSER'S INSURANCE COMPLIANCE AFFIRMATION

---

Proposer's Name

---

Address

- ☐ If awarded the contract: Proposer will comply with the insurance coverage provisions set forth in Exhibit B, Section 5, Indemnification and Insurance Requirements, of this Request for Proposals, and Proposer will procure, maintain, and provide the County with proof of insurance coverage in the coverage amounts and types specified in Exhibit B, Section 5, throughout the entire term of the proposed contract, without interruption or break in coverage.
- ☐ If you check this box, your proposal will be determined nonresponsive and your proposal will be disqualified. Proposer will not comply with the insurance coverage provisions set forth in Exhibit B, Section 5, Indemnification and Insurance Requirements, of this Request for Proposals, and Proposer will not procure, maintain, and provide the County with proof of insurance coverage in the coverage amounts and types specified in Exhibit B, Section 5, throughout the entire term of the proposed contract, without interruption or break in coverage.

Signature of Proposer: \_\_\_\_\_ Date: \_\_\_\_\_

**CERTIFICATION OF COMPLIANCE WITH THE COUNTY'S  
DEFAULTED PROPERTY TAX REDUCTION PROGRAM**

The Proposer certifies that:

- ☐ It is familiar with the terms of the County of Los Angeles Defaulted Property Tax Reduction Program, Los Angeles County Code, Chapter 2.206.

To the best of its knowledge, after a reasonable inquiry, the Proposer/Bidder/Contractor is not in default, as that term is defined in Los Angeles County Code, Section 2.206.020.E, on any Los Angeles County property tax obligation.

The Proposer/Bidder/Contractor agrees to comply with the County's Defaulted Property Tax Reduction Program during the term of any awarded contract.

**-OR-**

- ☐ I am exempt from the County of Los Angeles Defaulted Property Tax Reduction Program, pursuant to Los Angeles County Code, Section 2.206.060, for the following reason:

*I declare under penalty of perjury under the laws of the State of California that the information stated above is true and correct.*

Print Name:	Title:
Signature:	Date:

## REQUEST FOR DISABLED VETERAN BUSINESS ENTERPRISE (DVBE) PREFERENCE PROGRAM CONSIDERATION FORM

INSTRUCTIONS: All proposers/bidders responding to this solicitation must complete and return this form for proper consideration of the proposal/bid.

In evaluating bids/proposals, the County will give preference to businesses that are certified by the State of California as a Disabled Veteran Business Enterprise (DVBE) or by the Department of Veterans as a Service Disabled Veteran-Owned Small Business (SDVOSB) consistent with Chapter 2.211 of the Los Angeles County Code.

Vendor understands that in no instance shall the disabled veteran business enterprise preference program price or scoring preference be combined with any other County preference program to exceed 8 percent in response to any County solicitation.

Information about the State's DVBE certification regulations is in the California Code of Regulations, Title 2, Subchapter 8, Section 1896 et seq., and is also available on the California Department of General Services Office of Disabled Veteran Business Certification and Resources Website at <http://www.pd.dgs.ca.gov>.

Information on the Veteran Affairs Disabled Business Enterprise certification regulations may be found in the Code of Federal Regulations, 38CFR 74 and is also available on the Veterans Affairs Website at: <http://www.vetbiz.gov>.

- ☐ **I AM NOT** a DVBE certified by the State of California or a Service Disabled Veteran-Owned Small Business with the Department of Veteran Affairs.
- ☐ **I AM** certified as a DVBE with the State of California or a Service Disabled Veteran-Owned Small Business with the Department of Veteran Affairs as of the date of this proposal/bid submission and I request this proposal be considered for the DVBE Preference.

**DECLARATION: I DECLARE UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE STATE OF CALIFORNIA THAT THE ABOVE INFORMATION IS TRUE AND ACCURATE.**

Name of Firm:	County Webven No.
Print Authorized Name:	Title:
Authorized Signature:	Date:

<b>SIGNATURE OF REVIEWER</b>	<b>APPROVED</b>	<b>DISAPPROVED</b>	<b>DATE</b>

**AS-NEEDED WEATHER MODIFICATION (CLOUD SEEDING) SERVICES (2015-AN013)  
MINIMUM REQUIREMENTS AFFIRMATION**

**PROPOSER MUST CHECK A BOX IN EVERY SECTION**

**Important Note:** The information on this form is subject to verification and will not be used for scoring purposes.

Completing this form by itself without including detailed narrative(s) in your proposal to support the minimum mandatory requirement(s) of this RFP, any inconsistencies or inaccuracy in the information provided on this form, and/or your Proposal, may subject your Proposal to disqualification or other actions, at the sole discretion of the County.

At the time of proposal submission, Proposer must meet the following minimum requirements:

**1. MINIMUM EXPERIENCE**

- ☐ Proposer's does meet the following minimum experience requirement as set forth in Part I, Section 1.B.2.: Proposer must have a minimum of five years of experience within the last ten years providing weather modification (Cloud Seeding) services to government, utility, or similar agencies. (In addition to responding on this form, as specified in Part I, Section 2.A.5, Experience, please provide a detailed narrative in your proposal to validate this minimum mandatory requirement for scoring of your proposal in this category.)

Years of Experience: \_\_\_\_\_

- ☐ Proposer does not meet the minimum experience requirement stated above.

**2. CERTIFICATION**

Proposer must submit a copy of the Proposer's managing employee's Weather Modification Association (WMA) certification.

- ☐ Yes. Please complete the chart below.

Certification	Certification No.	Name of Certificate Holder	Valid/Active Dates

- ☐ No. Proposer does not have the Certification as stated above.

Proposer declares under penalty of perjury that the information stated above is true and accurate. Proposer further acknowledges that if any false, misleading, incomplete, or deceptively unresponsive statements in connection with this proposal are made, the proposal may be rejected at the sole discretion of the County.

Signature	Title
Firm Name	Date



## **COUNTY OF LOS ANGELES**

### ***Policy on Doing Business With Small Business***

Forty-two percent of businesses in Los Angeles County have five or fewer employees. Only about 4 percent of businesses in the area exceed 100 employees. According to the Los Angeles Times and local economists, it is not large corporations, but these small companies that are generating new jobs and helping move Los Angeles County out of its worst recession in decades.

#### **WE RECOGNIZE...**

##### **The importance of small business to the County:**

- In fueling local economic growth.
- Providing new jobs.
- Creating new local tax revenues.
- Offering new entrepreneurial opportunity to those historically under-represented in business.

##### **The County can play a positive role in helping small business grow:**

- As a multi-billion dollar purchaser of goods and services.
- As a broker of intergovernmental cooperation among numerous local jurisdictions.
- By greater outreach in providing information and training.
- By simplifying the bid/proposal process.
- By maintaining selection criteria which are fair to all.
- By streamlining the payment process.

#### **WE THEREFORE SHALL:**

1. Constantly seek to streamline and simplify our processes for selecting our vendors and for conducting business with them.
2. Maintain a strong outreach program, fully coordinated among our departments and districts, as well as other participating governments to: (a) inform and assist the local business community in competing to provide goods and services; and, (b) provide for ongoing dialogue with and involvement by the business community in implementing this policy.
3. Continually review and revise how we package and advertise solicitations, evaluate, and select prospective vendors, address subcontracting, and conduct business with our vendors, in order to: (a) expand opportunity for small business to compete for our business; and, (b) to further opportunities for all businesses to compete regardless of size.
4. Ensure that staff who manage and carry out the business of purchasing goods and services are well-trained, capable, and highly motivated to carry out the letter and spirit of this policy.

**Listing of Contractors Debarred in Los Angeles County**

**List of Debarred Contractors in Los Angeles County may be obtained by going to the following website:**

**[http://lacounty.info/doing\\_business/DebarmentList.htm](http://lacounty.info/doing_business/DebarmentList.htm)**

# County of Los Angeles *Lobbyist Ordinance*



IT'S THE LAW

## It may affect you!

Chapter 2.160 of the Los Angeles County Code requires Lobbyists, Lobbying Firms and Lobbyist Employers to register with the Executive Office of the Board of Supervisors. This ordinance imposes extensive reporting requirements on individuals, businesses and other organizations. It places restrictions on the activities of anyone seeking to influence an official action of the County of Los Angeles including actions of the Board of Supervisors or the granting or denial of County contracts, licenses, permits, grants and franchises.

### YOU MAY BE CONSIDERED A COUNTY LOBBYIST

If you are compensated to communicate directly (or through agents) with any County official for the purpose of influencing official action, then you may be required to register with the Executive Office of the Board of Supervisors. The requirement to register is the same whether you are an employee of, or on contract with, a firm or organization with business before the County. Additionally, an individual or business entity may be considered a County Lobbying Firm if it receives compensation to influence the County on behalf of any **other** persons or businesses. An individual, business entity or organization that employs or contracts with another individual or firm to represent or make contacts with a County agency on their behalf to influence County action may be considered a County Lobbyist Employer who must also register. If in doubt, it is best to register.

Furthermore, each person or entity who is not otherwise required to register as a County Lobbyist, Lobbying Firm or Lobbyist Employer, but who directly or indirectly expends \$5,000 or more during a calendar quarter to influence official action need not register BUT must report the expenditure to the Executive Office of the Board of Supervisors on a form available from the Executive Office.

### REGISTERING IS IMPORTANT

Failure to comply with the ordinance may subject offending Lobbyists, Lobbying Firms, and Lobbyist Employers to **serious penalties including fines up to \$2,000 and denial of contracts, licenses, permits, grants or franchises. Moreover, some violators may be refused permission to address the Board of Supervisors or any County commission.**

### HERE'S HOW TO COMPLY WITH THE LAW

Within 10 days of qualifying as a County Lobbyist, Lobbying Firm, or Lobbyist Employer as described in the ordinance, you must register with the Executive Office of the Board of Supervisors.

Registering with the County is easy. To receive a copy of the ordinance and registration forms, or to receive additional information or answers to specific questions, please contact the Executive Office of the Board of Supervisors at the following address or you may call one of the following telephone numbers:

Executive Office of the Board of Supervisors  
County of Los Angeles  
383 Kenneth Hahn Hall Of Administration  
500 West Temple Street  
Los Angeles, California 90012

(213) 974-1093      (213) 974-1578

A copy of the ordinance is available for your review at this County facility or on the Internet.

<http://bos.co.la.ca.us/>

Thank you for your cooperation and attention.



Part II  
Sample Agreement



BY AND BETWEEN

THE COUNTY OF LOS ANGELES,  
DEPARTMENT OF PUBLIC WORKS

AND

[NAME OF CONTRACTOR]

FOR

**AS-NEEDED WEATHER MODIFICATION (CLOUD SEEDING) SERVICES  
(2015-AN013)**

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SAMPLE AGREEMENT FOR  
AS-NEEDED WEATHER MODIFICATION  
(CLOUD SEEDING) SERVICES (2015-AN013)

THIS AGREEMENT, made and entered into this \_\_\_\_ day of \_\_\_\_\_, 2015, by and between the COUNTY OF LOS ANGELES, a subdivision of the State of California, a body corporate and politic (hereinafter referred to as COUNTY) and [Name of CONTRACTOR], a [State of Incorporation] [Form of Entity] (hereinafter referred to as CONTRACTOR).

WITNESSETH

FIRST: The CONTRACTOR, for the consideration hereinafter set forth and the acceptance by the Board of Supervisors of said COUNTY of the CONTRACTOR'S Proposal filed with the COUNTY on \_\_\_\_\_, 2015, hereby agrees to provide services as described in this Contract for As-Needed Weather Modification (Cloud Seeding) Services (2015-AN013).

SECOND: This AGREEMENT, together with Exhibit A, Scope of Work; Exhibit B, Service Contract General Requirements; Exhibit C, Internal Revenue Service Notice 1015; Exhibit D, Safely Surrendered Baby Law Posters; Exhibit E, Defaulted Property Tax Reduction Program; Exhibit F, Performance Requirements Summary; Exhibit G, Area Map; Exhibit H, Cloud Seeding Program Report; Exhibit I, Mitigated Negative Declaration; Exhibit J, Weather Modification Association Qualifications and Procedures; the CONTRACTOR'S Proposal, all attached hereto; the Request for Proposals; and Addenda to the Request for Proposals, all of which are incorporated herein by reference, are agreed by the COUNTY and the CONTRACTOR to constitute the Contract.

THIRD: The COUNTY agrees, in consideration of satisfactory performance of the foregoing services in strict accordance with the Contract specifications to the satisfaction of the Director of Public Works, to pay the CONTRACTOR pursuant to the Schedule of Prices set forth in the Proposal and attached hereto as Form PW-2, an amount not to exceed \$\_\_\_\_\_ per year or such greater amount as the Board may approve (Maximum Contract Sum).

FOURTH: As part of the evaluation process relative to this Contract solicitation, the COUNTY determined that notwithstanding the foregoing, the parties understand and agree that this Contract is nonexclusive, the COUNTY may enter into other contracts for the performance of the same or similar services, and the CONTRACTOR is not entitled to or guaranteed the assignment of any work hereunder.

FIFTH: This Contract's initial term shall be for a period of one year commencing upon Board approval or execution of both parties, whichever occurs last. The COUNTY shall have the sole option to renew this Contract term for up to four additional one-year periods and a six month-to-month extensions, for a maximum total Contract term of five years and six months. Each such option shall be exercised at the sole discretion of the

COUNTY. The COUNTY, acting through the Director, may give a written notice of intent to renew this Contract at least ten days prior to the end of each term. At the sole discretion of the COUNTY, in lieu of renewing the Contract for the full one year, this Contract may be renewed on a month-to-month basis, upon written notice to the CONTRACTOR at least ten days prior to the end of a term. The Director will provide a written notice of nonrenewal at least ten days before the last day of any term, in which case this Contract shall expire as of midnight on the last day of that term. Where all option years have been exercised, the Director will not provide a written notice of nonrenewal.

SIXTH: The CONTRACTOR shall bill monthly, in arrears, for the work performed during the preceding month. Work performed shall be billed at the unit prices quoted in Form PW-2, Schedule of Prices.

SEVENTH: Public Works will make payment to the CONTRACTOR within 30 days of receipt and approval of a properly completed and undisputed invoice. However, should the CONTRACTOR be certified by the COUNTY as a Local Small Business Enterprise, payment will be made in accordance with Board of Supervisors Policy No. 3.035, Small Business Liaison and Prompt Payment Program. Each invoice shall be in triplicate (original and two copies) and shall itemize the work completed. The invoices shall be submitted to:

County of Los Angeles Department of Public Works  
Attention Fiscal Division, Accounts Payable  
P.O. Box 7508  
Alhambra, CA 91802-7508

EIGHTH: In no event shall the aggregate total amount of compensation paid to the CONTRACTOR exceed the amount of compensation authorized by the Board. Such aggregate total amount is the Maximum Contract Sum.

NINTH: The CONTRACTOR understands and agrees that only the designated Public Works Contract Manager is authorized to request or order work under this Contract. The CONTRACTOR acknowledges that the designated Contract Manager is not authorized to request or order any work that would result in the CONTRACTOR earning an aggregate compensation in excess of this Contract's Maximum Contract Sum.

TENTH: The CONTRACTOR shall not perform or accept work requests from the Contract Manager or any other person that will cause the Maximum Contract Sum of this Contract to be exceeded. The CONTRACTOR shall monitor the balance of this Contract's Maximum Contract Sum. When the total of the CONTRACTOR'S paid invoices, invoices pending payment, invoices yet to be submitted, and ordered services reaches 75 percent of the Maximum Contract Sum, the CONTRACTOR shall immediately notify the Contract Manager in writing. The CONTRACTOR shall send written notification to the Contract Manager when this Contract is within six months from expiration of the term as provided for hereinabove.

ELEVENTH: No cost-of-living adjustments shall be granted for the optional renewal periods.



IN WITNESS WHEREOF, the COUNTY has, by order of its Board of Supervisors, caused these presents to be subscribed by the Director of Public Works, and the CONTRACTOR has subscribed its name by and through its duly authorized officers, as of the day, month, and year first written above.

COUNTY OF LOS ANGELES

By \_\_\_\_\_  
Director of Public Works

APPROVED AS TO FORM:

MARK J. SALADINO  
County Counsel

By \_\_\_\_\_  
Deputy

[NAME OF CONTRACTOR]

By \_\_\_\_\_  
Its President

\_\_\_\_\_  
Type or Print Name

By \_\_\_\_\_  
Its Secretary

\_\_\_\_\_  
Type or Print Name



## SCOPE OF WORK

## WEATHER MODIFICATION (CLOUD SEEDING) SERVICES (2015-AN013)

A. Public Works Contract Manager

Public Works Contract Manager will be Mr. William Saunders of Water Resources Division, who may be contacted at (626) 458-6186, e-mail address: [wsaunder@dpw.lacounty.gov](mailto:wsaunder@dpw.lacounty.gov), Monday through Thursday, 7 a.m. to 5 p.m. The Contract Manager is the only person authorized by Public Works to request work of the Contractor. From time to time, Public Works may change the Contract Manager. The Contractor will be notified in writing when there is a change in the Contract Manager.

B. Work Location

Work locations will be within the County of Los Angeles, the Cloud Seeding Program will target the watersheds tributary to Big Tujunga, Pacoima, and San Gabriel Dams (See Exhibit G).

C. Work Description

The Scope of Work includes, but is not limited to, all services specified herein. The Contractor shall provide cloud seeding services in preparation for and during storm season (October 15 through April 15).

The County reserves the right to determine if any work is or will be needed, and/or requested under this Contract, at the County's sole and absolute discretion. The Contractor waives all claims against the County for damages or loss of any nature resulting from the County's failure to use the Contractor's services including, but not limited to, lost profit.

Please note, should an inconsistency be determined between the Scope of Work and the Performance Requirements Summary (Exhibit F), the higher service level in the judgment of Public Works shall prevail.

Under this Contract the Contractor shall complete the following Tasks A through C:

**Task A - Preparation**

## 1. Cloud Seeding Program Report

- a. The Contractor shall evaluate past Public Works' weather modification generator locations (See Exhibit H - San Gabriel Mountains Cloud Seeding Program Report dated April 8, 2009) and confirm the ongoing appropriateness of past cloud seeding locations and methodologies. The Contractor shall develop an

updated Cloud Seeding Program Report (Report). Recommendations for Alternative and/or additional locations shall be consistent with the Mitigated Negative Declaration (MND) and may be included within the Report. Absent additional approval or authorization by the County, cloud seeding locations shall be limited to those identified in Exhibit G (Cloud Seeding Locations) and in the Exhibit I, Section 1.5 Project Location, Table 1: County of Los Angeles Weather Modification Project, MND, dated October 6, 2009.

- b. The Report shall provide an overview of how the Contractor intends to get radar information as well as exactly what information technology products will be available to enhance the Weather Modification Program. These products must be made available to Public Works throughout the Contract term. If applicable, the Contractor shall be responsible for the installation, operation, maintenance, and removal of all radar equipment and/or other technology products utilized in conformance with industry standards and Federal Communications Commission regulations.
- c. The Report shall provide an overview of how the Contractor intends to get weather, and hydrologic data from Public Works' Automated Local Evaluation in Real Time (ALERT) or ALERT2 System. Public Works actively upgrades and/or replaces its computers and/or network on a routine basis. The Contractor shall be responsible for all computer and internet access to gain real time weather, and hydrologic data from Public Works' ALERT or ALERT2 System in addition to radar data. The Contractor shall demonstrate the ability to acquire real-time ALERT or ALERT2 data prior to initiation of the Cloud Seeding Program as requested by the Contract Manager.
- d. The Report shall provide an overview describing how the Contractor will acquire meteorological forecasts with sufficient frequency to constantly monitor conditions that may be suitable for seeding. The Contractor shall provide on-site satellite receiving capability for acquiring in real-time, visible, or infrared imagery.
- e. The Report shall detail organizational approaches, and/or control center sites that will be used to operate the Cloud Seeding Program. Potential control sites should consider radar, satellite antenna, or other associated equipment for the reception of weather data and radio communication equipment for remote control land based seeding devices. Additionally, telephone service for communication with Public Works personnel will be required. Unless otherwise obtained and approved by Public Works, the

Contractor shall be responsible for providing telephone, commercial power, and auxiliary power services to the proposed cloud seeding control center and nucleating generator equipment. The project control center shall be capable of maintaining fully operational status of all radar systems, radio and telephone communication systems, and remote seeding generator control systems using auxiliary power without commercial electrical power for a minimum of 24 hours. All costs for any project control site shall be included in the costs of the project.

- f. The Report shall be developed under the overall supervision of the Contractor. A Weather Modification Association (WMA) certified manager or a Certified Consulting Meteorologist from the American Meteorological Society must be used to design/update the Cloud Seeding Program in compliance with the criteria described in Exhibit J.
- g. A draft version of the Report shall be provided to Public Work four weeks to review the draft and return comments. All comments shall be incorporated, finalized, and delivered to Public Works within three weeks for approval. Approval of the updated Report is required prior to its implementation.
- h. The remote cloud nucleating generators shall be remotely operated wherever practical from a control center as described in Exhibit I, MND, Remotely Operated Units.
- i. The Report shall have a full description of the exact location, instrument type for each cloud nucleating generator placement, and affiliated equipment, including diagrams. The Report shall identify Contractor personnel who will operate and maintain the equipment defined in Section C, Task A, Part 2, Section d.
- j. The Report shall show an area map indicating the designated target watershed(s) to be covered by each cloud nucleating generator under expected normal conditions of air movement during typical storm types.
- k. The Report shall include operational manual and guidelines, including, but not limited to:
  - i. Activation criteria and procedures.
  - ii. Contractor staffing (meteorologist, maintenance, and technical support).
  - iii. Contractor's protocol for coordination with Public Works staff.

- iv. Remote weather monitoring technique.
- v. Proposed equipment.
  - (1) Chemical makeup of nucleating agent.
  - (2) Fuel or propellant to be used.
  - (3) Capability of nucleating agent supply (gallons, grams/hr, etc.).
  - (4) Capacity of fuel supply (i.e., Compressed Natural Gas volume, flare duration or other units, if appropriate), including maximum continuous hours of operation per station.
  - (5) Descriptions, operations manuals, and specifications of equipment, capabilities, or limitations associated with the selected type of cloud nucleating generators and associated telemetry.
  - (6) Vandalism and fire hazard protection measures. Equipment used for cloud seeding purposes utilizes potentially explosive gas and/or solid material. Reasonable protection from vandalism such as additional fencing and lockable equipment will be required for each of the final locations selected for equipment installation. Additionally, fire hazard suppression techniques such as spark arrestors and perimeter dry weed clearing shall be addressed. Public Works shall determine whether the need for basic protection from vandalism and fire hazard has been met by the Contractor. Duplicate keys used for cloud seeding equipment locking purposes shall be provided by the Contractor to Public Works.
  - (7) Storage and/or removal of equipment during off season.

2. Equipment Installation

- a. The Contractor shall provide, install, adjust, calibrate, maintain, and operate a system of cloud nucleating generators (remotely and/or manually operated) within the work location area. All equipment shall be kept in good operating condition.

- b. County-owned property shall be used as the site location for the installation of the generators and operated in such a manner as to provide timely dispersal of artificial nuclei to effectively nucleate available cloud systems.
- c. A minimum of ten weather modification land based seeding sites are proposed to be selected out of 15 potential locations called out in the MND. The final selected locations shall depend on the Contractor's recommendation documented within the Report. The project may indicate a combination of remotely operated and manually operated cloud nucleating generation sites for the success of the Cloud Seeding Program. A minimum of four sites shall be remotely controlled using high-output flare-type apparatus. The final selected remote locations shall depend on the Contractor's recommendation documented within the Report. A different combination of weather modification devices can be used if it can be shown that a different combination of devices would satisfy or improve a high probability of rain augmentation success.
- d. The Contractor shall supply and coordinate propane, storage tanks, and other manually operated silver iodide generating appurtenances. The Contractor shall also supply all equipment and instrumentation for the remotely controlled high output flare type apparatus. The Contractor shall be responsible for the coordination and all costs necessary to obtain permit(s), temporary construction easements (if any), and expenses related to installation of the generators.
- e. All weather modification generators shall use silver iodide (AgI) as the seeding agent. The remotely operated seeding devices shall be equipped with the following features:
  - i. Capability of igniting multiple 150 gram flares of silver iodide containing combustible material within 15 minutes.
  - ii. Continuous remote monitoring system, including on-off and battery status.
  - iii. Direct current power source with emergency backup batteries capable of providing power for at least 24 hours of operation, if applicable.
  - iv. Software for determining remotely operated equipment status during operational periods.
  - v. Spark suppression covers over the flares. The flare covers shall retain any sparks produced by the flares.

- f. The manually operated seeding devices shall have the capability of releasing at least 25 grams/hr of solution containing 3 percent AgI.
- g. As detailed within this Scope of Work, the Contractor shall be responsible for providing commercial and auxiliary power services as necessary for the proposed nuclei generating equipment.

#### **Task B - Operation**

- 1. Operation of cloud seeding equipment shall be the responsibility of the Contractor. The Cloud Seeding Program will be managed by the Contractor's WMA certified operator as provided in Exhibit J. The Contractor will provide all equipment, materials, and personnel necessary to properly direct operations. The Contractor and project manager must have at least five years of experience within the last ten years providing weather modification (cloud seeding) services to government, utility, or similar agencies in the central and southern California region.
- 2. Cloud seeding operations shall be carefully coordinated with weather conditions to ensure maximum effect on the target area and avoid any weather modification operations outside the target areas. The seeding objective should be to seed as many favorable storms as practical to enhance precipitation within the target areas.
- 3. The Contractor shall:
  - a. Monitor storm systems during the period of October 15 through April 15 (storm season).
  - b. Determine the cloud formations potentially responsive to seeding from cloud nucleating generators based on current meteorological data and radar observations.
  - c. Make recommendations to designated Public Works Contract Manager or designee regarding which generators are to be operated, when they are to be turned on and off, and initiate the cloud seeding process once approval has been given by the Public Works Contract Manager or designee.
  - d. Inform Public Works Contract Manager or designee of all significant events relative to the progress in weather modification efforts.
  - e. Specify the method of verification to be used to determine the location of the augmented precipitation deposition in accordance with this Exhibit immediately after the seeded storm has passed.

- f. Be responsible for operational control of the cloud seeding generators, including communications, flare replacement, and maintenance/repair of all the Contractor's equipment.
- g. Provide the appropriate equipment to acquire real-time weather data available from Public Works ALERT System, National Weather Service (NWS), or other sources to ensure that the Contractor's WMA Certified Manager or meteorologist shall have access to sufficient current weather data to make forecasts and seeding recommendations as required.

### **Task C - Reports**

#### **1. Monthly Operational Report**

The Contractor shall provide one hard copy and one electronic copy of a monthly operational report at the end of each month using Microsoft Word. This report shall include general remarks on the cloud seeding opportunities and activities of the month and summary of storm periods. The monthly report shall include computerized color weather images with color contouring. All precipitation events and contoured radar scans are to be recorded on CD or DVD, which shall show targeted rain cloud positions, relevant wind directions, and indicate time of nuclei generation data. Radar range shall be at least 100 nautical miles. All archival CD or DVDs shall be part of the monthly operations Report. All costs for archival CD or DVDs shall be included in the cost of the monthly operational report.

#### **2. Annual Report**

The Contractor shall provide five hard copies and one electronic copy of a draft annual operation and evaluation report using Microsoft Word within 45 days following termination of the Storm season for Public Works to review. This report shall be a summary of all activities related to the project including seeding operations, storm data, analysis of actual silver iodide plume dispersion, assessment of additional precipitation, and a discussion of project effectiveness. The Contractor will incorporate comments received from Public Works into the draft submittal and submit five hard copies and one electronic copy of a final annual report using Microsoft Word within 14 days of receiving comments. Photographs of equipment used in connection with this project shall be included as part of the report.

#### **3. Federal and State Reporting**

The Contractor will provide any and all reporting required by State and Federal authorities to conduct a weather modification program.

D. Hours and Days of Service

Services shall be primarily performed throughout the storm season, from October 15 through April 15, and includes County-observed holidays. Work hours may be altered, when necessary, with the approval of the Contract Manager.

Holidays Observed by the County of Los Angeles are:

New Year's Day	Columbus Day
Martin Luther King, Jr. Day	Veterans Day
Presidents' Day	Thanksgiving Day
Memorial Day	Day after Thanksgiving
Independence Day	Christmas Day
Labor Day	

E. Utilities

The County will not provide utilities.

F. Storage Facilities

The County will not provide storage facilities for the Contractor.

G. Removal of Debris

All debris derived from these services shall be removed from Public Works property and become the property of the Contractor. The Contractor shall dispose of all debris from these services in a legally established area appropriate for type of debris being disposed. Disposal shall be at the Contractor's expense. The Contractor shall not allow any debris from its operations under this Contract to be deposited in the storm drains and/or gutters in violation of the National Pollutant Discharge Elimination System.

H. Suspension of Work

The Contractor shall make recommendations for suspending the Cloud Seeding program based on Contractor analysis of any number of conditions including, but not limited to the weather pattern, forecast, and watershed conditions. Approval from Public Works shall be obtained prior to suspending cloud seeding operations. If required to protect public safety, the Contractor may suspend project operations and obtain subsequent approval from the Contract Manager. Otherwise, the Contract Manager may suspend project operations at any time based on the needs of the County including, but not limited to:



1. Dam Operations

Cloud seeding operations for an upcoming and any succeeding storms may be suspended with Contract Manager's approval if reservoir storage is at a level where it is probable that additional inflow to the reservoir from upcoming storms may result in water being released at rates greater than the capacity of the downstream water conservation facilities. This would result in water loss to the ocean. Additionally, determination that ongoing reservoir reconstruction efforts are being significantly impaired by increased watershed inflow as a result of seeding may be reason for suspension. The suspension will continue until the Contract Manager or Operations Director authorizes cloud seeding activities to resume.

2. Precipitation

Cloud seeding may be suspended if precipitation rates exceed 1 inch per hour within the target area. Seeding will be suspended, with Contract Manager's approval, if any storm is forecast to produce over 5 inches of rainfall within a 24-hour period in the target areas. The suspension will continue until the Contract Manager authorizes cloud seeding activities to resume.

3. Weather Watch

Cloud seeding will be suspended with Contract Manager's approval whenever the NWS issues a flash flood warning for the target areas. Whenever the NWS issues a Traveler's Advisory, Winter Storm Warning, or Flash Flood Watch, these notifications will be factored with other variables for the Contract Manager to determine whether seeding should be suspended. The suspension will continue until the Contract Manager authorizes cloud seeding activities to resume.

4. Fire Damage

To prevent undue erosion, mudflow hazards, or flooding downstream of an area that has been burned prior to or during a storm season, seeding activities in that area may be suspended for the remainder of the storm season for that year with the Contract Manager's approval. The suspension will continue until the Contract Manager authorizes cloud seeding activities to resume.

5. Earthquake Damage

Depending on the intensity and distance from the epicenter of an earthquake, prior to or during a Storm season, the soil structure in the target area could be disturbed creating the potential for damaging landslides and mudflows during periods of moderate to heavy rainfall. If these conditions exist in the target area, the cloud seeding in the affected

area may be suspended with the Contract Manager's approval for the remainder of the year's storm season. The suspension will continue until the Contract Manager authorizes cloud seeding activities to resume.

6. Special Conditions

Seeding may be suspended with the Contract Manager's approval due to special conditions such as significant construction activities, search and rescue operation, higher than normal public use such as holidays, and special events such as bicycle races or large public gatherings. The suspension will continue until the Contract Manager authorizes cloud seeding activities to resume.

7. Los Angeles Basin

Seeding operations will be suspended with the Contract Manager's approval if they are predicted to have an impact within the Los Angeles Basin. The suspension will continue until the Contract Manager authorizes cloud seeding activities to resume.

8. Other Conditions

Seeding activities may be suspended for any circumstances as agreed by the Contract Manager and Contractor's WMA Certified Manager if deemed unsafe or in the best interest of the Program. The Contract Manager will make the final decision in the event of disagreement.

9. Exhaustion of Funds

All weather modification services will be immediately suspended by Contract Manager if the not-to-exceed budget limit to the program is reached.

10. Discretion of Public Works

All weather modification services may be immediately suspended at the sole discretion of Public Works.

I. Special Safety Requirements

All Contractor's operators shall be expected to observe all applicable State of California Occupational Safety, Health Administration (Cal/OSHA), and Public Works' safety requirements while at Public Works' jobsites.

Suitable clothing, gloves, and shoes that meet Cal/OSHA requirements are required. Contractor shall inspect and identify, any condition(s) that renders any portion of the premises unsafe. Contractor shall notify the Contractor Manager immediately when a condition threatens imminent injury to the public or damage

to property. The Contractor shall be responsible for blocking any unsafe areas by using barricades or traffic cones to alert the public of the existence of hazards, and to protect members of the public or others from injury. The Contractor shall cooperate fully with Public Works in the investigation of any accidental injury or death occurring on the premises, including a complete written report to the Contract Manager within five days following the occurrence.

J. Maps

See Exhibit G for proposed 15 cloud seeding locations. Up to 10 sites will be implemented as recommended in the Report.

K. Responsibilities of the Contractor

1. The Contractor shall maintain a WMA certified manager who will design/update the Cloud Seeding Program. The Contractor shall maintain a WMA-certified operator.
2. The Contractor shall maintain the required insurance and coverage as specified in Exhibit B, Section 5, Indemnification and Insurance Requirements, during the entire term of this Contract. At any time during the term of this Contract if there is a lapse in insurance coverage the Contractor shall immediately suspend work and notify the Contract Manager.
3. The Contractor shall provide all required equipment, transportation, and lodging of all of the Contractor's personnel used in conducting the entire project. The Contractor shall provide transportation, protection, and storage for all of the Contractor's equipment used in performance of the project. The Contractor's proposal should discuss how equipment will be stored or protected from vandalism during the off season.

L. Responsibilities of Public Works

1. The County may perform periodic inspections of the work location(s) as determined necessary or requested by the Contract Manager. The Contract Manager or Designee may accompany the Contractor to observe the progress of work.
2. The County shall maintain updated information readily available to the Contractor regarding the following:
  - a. Topographic maps of the target area.
  - b. Historical rainfall data collected at rain gages within the target area.
  - c. Information regarding the availability of County property within proposed cloud seeding control centers and/or generator sites.

- d. Access to its ALERT network for rain gages to provide near real-time rainfall data.
3. Public Works will conduct meetings with the Contractor at predetermined times and locations. Unless otherwise agreed upon by the Contract Manager, meetings will be held monthly. Upon approval by the Contract Manager, conference calls during relatively dry portions of the rainy season may be used to fulfill the requirements of this section.
4. Public Works shall review and return comments on submitted material within four weeks. The Contractor shall submit all reports required in this Exhibit to Public Works in time to allow for review of any material within the two-week period, return the material to the Contractor for finalization, and the Contractor shall forward the material as necessary to meet any deadlines necessary to successfully pursue the Cloud Seeding Program.

M. Additional Work/Locations

1. The Contract Manager may authorize the Contractor to perform additional work including, but not limited to, adding or removing service area(s); however, limited to Exhibit G or performing repairs and replacements when the need for such work arises out of unforeseen incidents. If the Contract Manager determines such additional work can be obtained in whole or in part by temporarily modifying the Contractor's tasks and work schedules, he or she may direct such modification.
2. Purchase of equipment may be added during the Contract period. Upon request by the Contract Manager, the Contractor shall provide a written quotation for any weather modification equipment to be purchased. Where applicable, rates quoted in Form PW-2, Schedule of Prices, shall be used. The Contractor shall be paid for additional required equipment upon Contract Manager's negotiation and acceptance of the Contractor's written quotation, and subject to approval of the Contract Manager. The additional work/location(s) may be added to the Contract by amendment or change order.

N. Project Safety Official

The Contractor shall designate in writing a Project Safety Official who shall be thoroughly familiar with the Contractor's Injury and Illness Prevention Program and Code of Safe Practices. The Contractor's Project Safety Official shall be available at all times to abate any potential safety hazards and shall have the authority and responsibility to shut down an operation, if necessary. Failure by the Contractor to provide the required Project Safety Official shall be grounds for the County to terminate all work activities and operations at no cost to the County until such time as the Contractor is in compliance.

N. Proposed Price

All services required in this Exhibit A, Scope of Work, shall be included in the price quoted by the Contractor in Form PW-2, Schedule of Prices.

O. Liquidated Damages

1. In any case of the Contractor's failure to meet certain specified performance requirements, the County may, in lieu of other remedies provided by law or the Contract, assess liquidated damages in specified sums and deduct them from any regularly scheduled payment to the Contractor. However, neither the provision of a sum of liquidated damages for nonperformance or untimely or inadequate performance, nor the County's acceptance of liquidated damages shall be construed to waive the County's right to reimbursement for damage to its property or indemnification against third-party claims.
2. The amounts of liquidated damages have been set in recognition of the following circumstances existing at the time of the formation of the Contract:
  - a. All of the time limits and acts required to be done by both parties are of the essence of the Contract.
  - b. The parties are both experienced in the performance of the Contract work.
  - c. The Contract contains a reasonable statement of the work to be performed in order that the expectations of the parties to the Contract are realized. The expectation of the County is that the work will be performed with due care in a workmanlike, competent, timely, and cost-efficient manner while the expectation of the Contractor is a realization of a profit through the ability to perform the Contract work in accordance with the terms and conditions of the Contract at the Proposal price.
  - d. The parties are not under any compulsion to contract.
  - e. The Contractor's acceptance of the assessment of liquidated damages against it for unsatisfactory and late performance is by agreement and willingness to be bound as part of the consideration being offered to the County for the award of the Contract.
  - f. It would be difficult for the County to prove the loss resulting from nonperformance or untimely, negligent, or inadequate performance of the work.

- g. The liquidated sums specified represent a fair approximation of the damages incurred by the County resulting from the Contractor's failure to meet the performance standard as to each item for which an amount of liquidated damages is specified.
- 3. The Contractor shall pay, or Public Works may withhold and deduct from monies due the Contractor, liquidated damages in the sum of \$500 for each calendar day that the Contractor fails to complete work within the time specified unless otherwise provided in this Contract, or approved by Contract Manager.
- 4. In addition to the above, Public Works may use Exhibit F, Performance Requirements Summary, to evaluate Contractor's performance.

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## SERVICE CONTRACT GENERAL REQUIREMENTS

## SECTION 1

## INTERPRETATION OF CONTRACT

A. Ambiguities or Discrepancies

Both parties have either consulted or had the opportunity to consult with counsel regarding the terms of this Contract and are fully cognizant of all terms and conditions. Should there be any uncertainty, ambiguity, or discrepancy in the terms or provisions hereof, or should any misunderstanding arise as to the interpretation to be placed upon any position hereof or the applicability of the provisions hereunder, neither party shall be deemed as the drafter of this Contract and the uncertainty, ambiguity, or discrepancy shall not be construed against either party.

B. Definitions

Whenever in the Request for Proposals, Contract, Scope of Work, Specifications, Terms, Requirements, and/or Conditions the following terms are used, the intent and meaning shall be interpreted as follows:

Agreement. The written, signed accord covering the performance of the requested.

Board. The Board of Supervisors of County of Los Angeles and Ex-Officio Board of Supervisors of the Los Angeles County Flood Control District.

Contract. The written agreement covering the performance of the service and the furnishing of labor, materials, supervision, and equipment in the performance of the service. The Contract includes the Agreement, Exhibit A, Scope of Work (Specifications); Exhibit B, Service Contract General Requirements; Exhibit C, Internal Revenue Service Notice 1015; Exhibit D, Safely Surrendered Baby Law Posters; Exhibit E, Defaulted Property Tax Reduction Program; and other appropriate exhibits, amendments, and change orders. Included are all supplemental agreements amending or extending the service to be performed, which may be required to supply acceptable services specified herein.

Contractor. The person or persons, sole proprietor, partnership, joint venture, corporation, or other legal entity who has entered into an agreement with County to perform or execute the work covered by this Contract.

Contract Work or Work. The entire contemplated work of maintenance and repair to be performed, and services rendered as prescribed in this Contract.

County. Includes County of Los Angeles, County of Los Angeles Department of Public Works, Los Angeles County Road Department, and/or Los Angeles County Engineer.

Day. Calendar day(s) unless otherwise specified.

Direct Employee. Worker employed by Contractor under Contractor's State and Federal taxpayer identification.

Director. The Director of Public Works, County of Los Angeles, as used herein, includes the Road Commissioner, County of Los Angeles; County Engineer, County of Los Angeles; Chief Engineer, Los Angeles County Flood Control District; and/or authorized representative(s).

District. Los Angeles County Flood Control District, or Los Angeles County Waterworks Districts, or Los Angeles County Consolidated Sewer Maintenance District.

Employee Leasing. Any agreement to employ any worker, at any tier, that is neither a Subcontract nor a direct employee relationship.

Fiscal Year. The 12-month period beginning July 1 and ending the following June 30.

Maximum Contract Sum. The Maximum Contract Sum is the aggregate total amount of compensation authorized by the Board.

Proposal. The written materials that a Proposer submits in response to a solicitation document (Request for Proposals).

Proposer. Any individual, person or persons, sole proprietor, firm, partnership, joint venture, corporation, or other legal entity submitting a Proposal for the work, acting directly or through a duly authorized representative.

Public Works. County of Los Angeles Department of Public Works.

Solicitation. Request for Proposals, Invitation for Bids, Request for Statement of Qualifications, or Request for Quotation.

Specifications. The directions, provisions, and requirements contained herein, as supplemented by such special provisions as may be necessary pertaining to method, manner, and place of performing the work under this Contract.

Subcontract. An agreement by the Contractor to employ a Subcontractor at any tier; to employ or agree to employ a Subcontractor, at any tier.



Subcontractor. Any individual, person or persons, sole proprietor, firm, partnership, joint venture, corporation, or other legal entity furnishing supplies, services of any nature, equipment, and/or materials to Contractor in furtherance of the Contractor's performance of this Contract, at any tier, under oral or written agreement.

C. Headings

The headings herein contained are for convenience and reference only and are not intended to define or limit the scope of any provision thereof.

## SECTION 2

### STANDARD TERMS AND CONDITIONS PERTAINING TO CONTRACT ADMINISTRATION

#### A. Amendments

1. For any change which affects the Scope of Work, Contract sum, payments, or any term or condition included in this Contract, an amendment shall be prepared and executed by Contractor and the Board or if delegated by the Board, the Director, and Contractor.
2. The Board or County's Chief Executive Officer or designee may require the addition and/or change of certain terms and conditions in this Contract during the term of this Contract. County reserves the right to add and/or change such provisions as required by the Board or the Chief Executive Officer. To implement such changes, an amendment or a change order to this Contract shall be prepared by Public Works and signed by the Contractor.
3. County may, at its sole discretion, authorize extensions of time to this Contract's term. Contractor agrees that such extensions of time shall not change any other term or condition of this Contract during the period of such extensions. To implement an extension of time, an amendment to this Contract shall be prepared and executed by Contractor and the Board or if delegated by the Board, the Director, and Contractor. To the extent that extensions of time for Contractor performance do not impact either scope or amount of this Contract, Public Works may, at its sole discretion, grant Contractor extensions of time, provided the aggregate of all such extensions during the life of this Contract shall not exceed 180 days.
4. For any change which does not materially affect the Scope of Work or any other term or condition included under this Contract, a change order shall be prepared by Public Works and signed by the Contractor. If the change order is prepared by the Contractor, it shall be approved by Public Works and signed by the Contractor and the County.

#### B. Assignment and Delegation

1. Contractor shall not assign its rights or delegate its duties under this Contract, or both, whether in whole or in part, without the prior written consent of County, in its discretion, and any attempted assignment or delegation without such consent shall be null and void. For purposes of this paragraph, County consent shall require a written amendment to this Contract, which is formally approved and executed by Contractor and the Board or if delegated by the Board, the Director, and Contractor. Any payments by County to any approved delegatee or assignee on any

claim under this Contract shall be deductible, at County's sole discretion, against the claims which Contractor may have against County.

2. Shareholders, partners, members, or other equity holders of Contractor may transfer, sell, exchange, assign, or divest themselves of any interest they may have therein. However, in the event any such sale, transfer, exchange, assignment, or divestment is effected in such a way as to give majority control of Contractor to any person(s), corporation, partnership, or legal entity other than the majority controlling interest therein at the time of execution of this Contract, such disposition is an assignment requiring the prior written consent of County in accordance with applicable provisions of this Contract.
3. Any assumption, assignment, delegation, or takeover of any of Contractor's duties, responsibilities, obligations, or performance of same by any person or entity other than Contractor, whether through assignment, Subcontract, delegation, merger, buyout, or any other mechanism, with or without consideration for any reason whatsoever without County's express prior written approval, shall be a material breach of this Contract, which may result in the suspension or termination of this Contract. In the event of such a termination, County shall be entitled to pursue the same remedies against Contractor as it could pursue in the event of default of Contractor.

C. Authorization Warranty

Contractor represents and warrants that the person(s) executing this Contract for Contractor is an authorized agent who has actual authority to bind Contractor to each and every term, condition, and obligation of this Contract and that all requirements of Contractor have been fulfilled to provide such actual authority.

D. Budget Reduction

In the event that the County's Board of Supervisors adopts, in any fiscal year, a County Budget which provides for reductions in the salaries and benefits paid to the majority of County employees and imposes similar reductions with respect to County Contracts, the County reserves the right to reduce its payment obligation under this Contract correspondingly for that fiscal year and any subsequent fiscal year during the term of this Contract (including any extensions), and the services to be provided by the Contractor under this Contract shall also be reduced correspondingly. Except as set forth in the preceding sentence, the Contractor shall continue to provide all of the services set forth in this Contract. The County's notice to the Contractor regarding said reduction in payment obligation shall be provided within 30 calendar days of the Board's approval of such actions.

E. Complaints

Contractor shall develop, maintain, and operate procedures for receiving, investigating, and responding to any complaints by any individual.

1. Within 12 business days after this Contract's effective date, Contractor shall provide County with Contractor's policy for receiving, investigating, and responding to any complaints by any individual.
2. County will review Contractor's policy and provide Contractor with approval of said plan or with requested changes.
3. If County requests changes in Contractor's policy, Contractor shall make such changes and resubmit the plan within five business days for County approval.
4. If, at any time, Contractor wishes to change Contractor's policy, Contractor shall submit proposed changes to County for approval before implementation.
5. Contractor shall preliminarily investigate all complaints and notify the Contract Manager of the status of the investigation within five business days of receiving the complaint.
6. When complaints cannot be resolved informally, a system of follow-through shall be instituted which adheres to formal plans for specific actions and strict time deadlines.
7. Copies of all written responses shall be sent to the Contract Manager within three business days of mailing to the complainant.

F. Compliance with Applicable Laws

1. In the performance of this Contract, Contractor shall comply with all applicable Federal, State, and local laws, rules, regulations, ordinances, directives, guidelines, policies and procedures, and all provisions required thereby to be included in this Contract are hereby incorporated herein by reference.
2. Contractor shall indemnify, defend, and hold harmless County, its officers, employees, and agents, from and against any and all claims, demands, damages, liabilities, losses, costs, and expenses, including, without limitation, defense costs and legal, accounting and other expert, consulting or professional fees, arising from, connected with, or related to any failure by Contractor, its officers, employees, agents, or Subcontractors, to comply with any such laws, rules, regulations, ordinances, directives, guidelines, policies, or procedures, as determined by County in its sole judgment. Any legal defense pursuant to

Contractor's indemnification obligations under this paragraph shall be conducted by Contractor and performed by counsel selected by Contractor and approved by County. Notwithstanding the preceding sentence, County shall have the right to participate in any such defense at its sole cost and expense, except that in the event Contractor fails to provide County with a full and adequate defense, as determined by County in its sole judgment, County shall be entitled to retain its own counsel, including, without limitation, County Counsel, and to reimbursement from Contractor for all such costs and expenses incurred by County in doing so. Contractor shall not have the right to enter into any settlement, agree to any injunction or other equitable relief, or make any admission, in each case, on behalf of County without County's prior written approval.

G. Compliance with Civil Rights Laws

Contractor hereby assures that it will comply with Subchapter VI of the Civil Rights Act of 1964, 42 USC Sections 2000 (e)(1) through 2000 (e)(17), to the end that no person shall, on the grounds of race, creed, color, sex, religion, ancestry, age, condition of physical disability, marital status, political affiliation, or national origin, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under this Contract or under any project, program, or activity supported by this Contract. Contractor shall comply with its EEO Certification (Form PW-7).

H. Confidentiality

1. Contractor shall maintain the confidentiality of all records obtained from County under this Contract in accordance with all applicable Federal, State, and local laws, ordinances, regulations, and directives relating to confidentiality.
2. Contractor shall indemnify, defend, and hold harmless County, its officers, employees, and agents, from and against any and all claims, demands, damages, liabilities, losses, costs and expenses, including, without limitation, defense costs and legal, accounting and other expert, consulting, or professional fees, arising from, connected with, or related to any failure by Contractor, its officers, employees, agents, or subcontractors, to comply with this paragraph, as determined by County in its sole judgment. Any legal defense pursuant to Contractor's indemnification obligations under this paragraph shall be conducted by Contractor and performed by counsel selected by Contractor and approved by County. Notwithstanding the preceding sentence, County shall have the right to participate in any such defense at its sole cost and expense, except that in the event Contractor fails to provide County with a full and adequate defense, as determined by County in its sole judgment, County shall be entitled to retain its own counsel, including, without

limitation, County Counsel, and to reimbursement from Contractor for all such costs and expenses incurred by County in doing so. Contractor shall not have the right to enter into any settlement, agree to any injunction, or make any admission, in each case, on behalf of County without County's prior written approval.

3. Contractor shall inform all of its officers, employees, agents, and Subcontractors providing services hereunder of the confidentiality provisions of this Contract.

I. Conflict of Interest

1. No County employee whose position with County enables such employee to influence the award of this Contract or any competing Contract, and no spouse or economic dependent of such employee shall be employed in any capacity by Contractor or have any other direct or indirect financial interest in this Contract. No officer or employee of Contractor who may financially benefit from the performance of the work hereunder shall in any way participate in County's approval, or ongoing evaluation, of such work, or in any way attempt to unlawfully influence County's approval or ongoing evaluation of such work.
2. Contractor represents and warrants that it is aware of, and its authorized officers have read, the provisions of Los Angeles County Code, Section 2.180.010, "Certain Contracts Prohibited," and that execution of this Agreement will not violate those provisions. Contractor shall comply with all conflict of interest laws, ordinances, and regulations now in effect or hereafter to be enacted during the term of this Contract. Contractor warrants that it is not now aware of any facts that create a conflict of interest. If Contractor hereafter becomes aware of any facts that might reasonably be expected to create a conflict of interest, it shall immediately make full written disclosure of such facts to County. Full written disclosure shall include, but is not limited to, identification of all persons implicated and a complete description of all relevant circumstances. Failure to comply with the provisions of this paragraph shall be a material breach of this Contract subjecting Contractor to either Contract termination for default or debarment proceedings or both. Contractor must sign and adhere to the "Conflict of Interest Certification" (Form PW-5).

J. Consideration of Hiring County Employees Targeted for Layoffs or Former County Employee on Reemployment List

Should Contractor require additional or replacement personnel after the effective date of this Contract to perform the services set forth herein, Contractor shall give first consideration for such employment openings to qualified permanent County employees who are targeted for layoff or qualified, former County employees who are on a reemployment list during the life of this Contract.

K. Consideration of Hiring GAIN and GROW Participants

1. Should Contractor require additional or replacement personnel after the effective date of this Contract, Contractor shall give consideration for any such employment openings to participants in County's Department of Public Social Services Greater Avenues for Independence (GAIN) Program and General Relief Opportunity for Work (GROW) Program who meet Contractor's minimum qualifications for the open position. For this purpose, consideration shall mean that Contractor will interview qualified candidates. County will refer GAIN and GROW participants by category to Contractor.
2. In the event that both laid-off County employees and GAIN and GROW participants are available for hiring, County employees shall be given first priority.

L. Contractor's Acknowledgment of County's Commitment to Child Support Enforcement

Contractor acknowledges that County places a high priority on the enforcement of child support laws and the apprehension of child support evaders. Contractor understands that it is County's policy to encourage all County Contractors to voluntarily post County's L.A.'s Most Wanted: Delinquent Parents poster in a prominent position at Contractor's place of business. County's Child Support Services Department will supply Contractor with the poster to be used.

M. Contractor's Charitable Activities Compliance

The Supervision of Trustees and Fundraisers for Charitable Purposes Act regulates entities receiving or raising charitable contributions. The "Nonprofit Integrity Act of 2004" (SB 1262, Chapter 919) increased Charitable Purposes Act requirements. By requiring Contractors to complete the Charitable Contributions Certification (Form PW-12), County seeks to ensure that all County Contractors which receive or raise charitable contributions comply with California law in order to protect County and its taxpayers. A Contractor which receives or raises charitable contributions without complying with its obligations under California law commits a material breach subjecting it to either Contract termination for default or debarment proceedings or both. (Los Angeles County Code, Chapter 2.202).

N. Contractor's Warranty of Adherence to County's Child Support Compliance Program

1. Contractor acknowledges that County has established a goal of ensuring that all individuals who benefit financially from County through Contracts are in compliance with their court-ordered child, family, and spousal support obligations in order to mitigate the economic burden otherwise imposed upon County and its taxpayers.

2. As required by County's Child Support Compliance Program (Los Angeles County Code, Chapter 2.200), and without limiting Contractor's duty under this Contract to comply with all applicable provisions of law, Contractor warrants that it is now in compliance and shall during the term of this Contract maintain compliance with the employment and wage reporting requirements as required by the Federal Social Security Act (42 USC Section 653a) and California Unemployment Insurance Code, Section 1088.5, and shall implement all lawfully served Wage and Earnings Withholding Orders or Child Support Services Department Notices of Wage and Earnings Assignment for Child, Family, or Spousal Support, pursuant to Code of Civil Procedure Section 706.031 and Family Code Section 5246(b).

O. Contractor Performance Evaluation/Corrective Action Measures

County or its agent will evaluate Contractor's performance under this Contract on not less than an annual basis. Such evaluation will include assessing Contractor's compliance with all this Contract's terms and conditions and performance standards. Contractor deficiencies which County determines are severe or continuing and that may place performance of this Contract in jeopardy, if not corrected, will be reported to the Board. The report will include improvement/corrective action measures taken by County and Contractor. If improvement does not occur consistent with the corrective action measures, County may suspend or terminate this Contract for default or impose other penalties as specified in this Contract.

P. Damage to County Facilities, Buildings, or Grounds

1. Contractor shall repair, or cause to be repaired, at its own cost, any and all damage to County facilities, buildings, or grounds caused by Contractor, employees, or agents of Contractor.
2. Such repairs shall be made immediately after Contractor has become aware of such damage, but in no event later than 30 days after the occurrence. If Contractor fails to make timely repairs, County may make any necessary repairs. All costs incurred by County, as determined by County, for such repairs shall be repaid by Contractor by cash payment upon demand. County may deduct from any payment otherwise due Contractor for costs incurred by County to make such repairs.

Q. Employment Eligibility Verification

1. Contractor warrants that it fully complies with all Federal and State statutes and regulations regarding the employment of aliens and others and that all of its employees performing work under this Contract meet the citizenship or alien status requirements set forth in Federal and State



statutes and regulations. Contractor shall obtain, from all covered employees performing services hereunder, all verification and other documentation of employment eligibility status required by Federal and State statutes and regulations including, but not limited to, the Immigration Reform and Control Act of 1986 (P.L. 99-603), or as they currently exist and as they may be hereafter amended. Contractor shall retain all such documentation for all covered employees for the period prescribed by law.

2. Contractor shall, defend, and hold harmless, the County of Los Angeles, its Special Districts, Elected Officials, Officers, Agents, Employees, and Volunteers from employer sanctions and any other liability which may be assessed against Contractor or County or both in connection with any alleged violation of Federal or State statutes or regulations pertaining to the eligibility for employment of persons performing services under this Contract.

R. Facsimile Representations

At the discretion of County, County may agree to regard facsimile representations of original signatures of Contractor's authorized officers, when appearing in appropriate places on the change notices and amendments prepared pursuant to this Exhibit's Amendments, and received via communications facilities, as legally sufficient evidence that such original signatures have been affixed to change notices and amendments to this Contract, such that the Contractor need not follow up facsimile transmissions of such documents with subsequent (nonfacsimile) transmission of "original" versions of such documents.

S. Fair Labor Standards

Contractor shall comply with all applicable provisions of the Federal Fair Labor Standards Act and shall indemnify, defend, and hold harmless the County of Los Angeles, its Special Districts, Elected Officials, Officers, Agents, Employees, and Volunteers from any and all liability including, but not limited to, wages, overtime pay, liquidated damages, penalties, court costs, and attorneys' fees arising under any wage and hour law including, but not limited to, the Federal Fair Labor Standards Act, for work performed by Contractor's employees for which County may be found jointly or solely liable.

T. Force Majeure

1. Neither party shall be liable for such party's failure to perform its obligations under and in accordance with this Contract, if such failure arises out of fires, floods, epidemics, quarantine restrictions, other natural occurrences, strikes, lockouts (other than a lockout by such party or any of such party's Subcontractors), freight embargoes, or other similar events to those described above, but in every such case the failure to perform must

be totally beyond the control and without any fault or negligence of such party (such events are referred to in this subparagraph as "force majeure events").

2. Notwithstanding the foregoing, a default by a Subcontractor of Contractor shall not constitute a force majeure event, unless such default arises out of causes beyond the control of both Contractor and such Subcontractor, and without any fault or negligence of either of them. In such case, Contractor shall not be liable for failure to perform, unless the goods or

services to be furnished by the Subcontractor were obtainable from other sources in sufficient time to permit Contractor to meet the required performance schedule. As used in this subparagraph, the term "Subcontractor" and "Subcontractors" mean Subcontractors at any tier.

3. In the event Contractor's failure to perform arises out of a force majeure event, Contractor agrees to use commercially reasonable best efforts to obtain goods or services from other sources, if applicable, and to otherwise mitigate the damages and reduce the delay caused by such force majeure event.

U. Governing Laws, Jurisdiction, and Venue

This Contract shall be governed by, and construed in accordance with the laws of the State of California. To the maximum extent permitted by applicable law, Contractor and County agree and consent to the exclusive jurisdiction of the courts of the State of California for all purposes concerning this Contract and further agree and consent that venue of any action brought in connection with or arising out of this Contract, shall be exclusively in the County of Los Angeles.

V. Most Favored Public Entity

If the Contractor's prices decline, or should the Contractor at any time during the term of this Contract provide the same goods or services under similar quantity and delivery conditions to the State of California or any county, municipality, or district of the State at prices below those set forth in this Contract, then such lower prices shall be immediately extended to the County.

W. Nondiscrimination and Affirmative Action

1. Contractor certifies and agrees that all persons employed by it, its affiliates, subsidiaries, or holding companies are and shall be treated equally without regard to or because of race, color, religion, ancestry, national origin, sex, age, physical or mental disability, marital status, or political affiliation, in compliance with all applicable Federal and State antidiscrimination laws and regulations.

2. Contractor shall certify to, and comply with, the provisions of Contractor's EEO Certification (Form PW-7).
3. Contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to race, color, religion, ancestry, national origin, sex, age, physical or mental disability, marital status, or political affiliation, in compliance with all applicable Federal and State antidiscrimination laws and regulations. Such action shall include, but not be limited to, employment, upgrading, demotion, transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection of training, including apprenticeship.
4. Contractor certifies and agrees that it will deal with its Subcontractors, bidders, or vendors without regard to or because of race, color, religion, ancestry, national origin, sex, age, physical or mental disability, marital status, or political affiliation.
5. Contractor certifies and agrees that it, its affiliates, subsidiaries, or holding companies shall comply with all applicable Federal and State laws and regulations to the end that no person shall, on the grounds of race, color, religion, ancestry, national origin, sex, age, physical or mental disability, marital status, or political affiliation, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under this Contract or under any project, program, or activity supported by this Contract.
6. Contractor shall allow County representatives access to Contractor's employment records during regular business hours to verify compliance with the provisions of this paragraph when so requested by County.
7. If County finds that any of the above provisions have been violated, such violation shall constitute a material breach of this Contract upon which County may terminate for default or suspend this Contract. While County reserves the right to determine independently that the antidiscrimination provisions of this Contract have been violated, in addition, a determination by the California Fair Employment Practices Commission or the Federal Equal Employment Opportunity Commission that Contractor has violated Federal or State antidiscrimination laws or regulations shall constitute a finding by County that Contractor has violated the antidiscrimination provisions of this Contract.
8. The parties agree that in the event Contractor violates any of the antidiscrimination provisions of this Contract, County shall, at its sole option, be entitled to a sum of \$500 for each violation pursuant to California Civil Code, Section 1671, as liquidated damages in lieu of terminating or suspending this Contract.

X. Nonexclusivity

Nothing herein is intended nor shall be construed as creating any exclusive arrangement with Contractor. This Contract shall not restrict County from acquiring similar, equal, or like goods and/or services from other entities or sources.

Y. No Payment for Services Provided Following Expiration/Suspension/Termination of Contract

Contractor shall have no claim against County for payment of any money or reimbursement, of any kind whatsoever, for any service provided by Contractor after the expiration, suspension, or other termination of this Contract. Should Contractor receive any such payment, it shall immediately notify County and shall immediately repay all such funds to County. Payment by County for services rendered after expiration/suspension/termination of this Contract shall not constitute a waiver of County's right to recover such payment from Contractor. This provision shall survive the expiration/suspension/termination of this Contract.

Z. Notice of Delays

Except as otherwise provided under this Contract, when either party has knowledge that any actual or potential situation is delaying or threatens to delay the timely performance of this Contract, that party shall, within one business day, give notice thereof, including all relevant information with respect thereto, to the other party.

AA. Notice of Disputes

Contractor shall bring to the attention of the Contract Manager any dispute between County and Contractor regarding the performance of services as stated in this Contract. If the Contract Manager is not able to resolve the dispute, the Director will resolve it.

BB. Notice to Employees Regarding the Federal Earned Income Credit

Contractor shall notify its employees, and shall require each Subcontractor to notify its employees, that they may be eligible for the Federal Earned Income Credit under the Federal income tax laws. Such notice shall be provided in accordance with the requirements set forth in Internal Revenue Service Notice 1015 (Exhibit C).

CC. Notices

Notices desired or required to be given under these Specifications, Conditions, or Terms herein or any law now or hereafter in effect may, at the option of the party giving the same, be given by enclosing the same in a sealed envelope addressed to the party for whom intended and by depositing such envelope with postage prepaid with the United States Post Office and any such notice and the envelope containing the same shall be addressed to Contractor at its place of business, or such other place as may be hereinafter designated in writing by Contractor. The notices and envelopes containing the same to County shall be addressed to:

Chief, Administrative Services Division  
County of Los Angeles Department of Public Works  
P.O. Box 1460  
Alhambra, CA 91802-1460

In the event of suspension or termination of this Contract, notices may also be given upon personal delivery to any person whose actual knowledge of such suspension or termination would be sufficient notice to Contractor. Actual knowledge of such suspension or termination by an individual Contractor or by a copartner, if Contractor is a partnership; or by the president, vice president, secretary, or general manager, if Contractor is a corporation; or by the managing agent regularly in charge of the work on behalf of said Contractor shall in any case be sufficient notice.

DD. Publicity

Contractor shall not disclose any details in connection with this Contract to any person or entity except as may be otherwise provided hereunder or required by law. However, in recognizing Contractor's need to identify its services and related clients to sustain itself, County shall not inhibit Contractor from publicizing its role under this Contract within the following conditions:

1. Contractor shall develop all publicity material in a professional manner.
2. During the term of this Contract, Contractor shall not, and shall not authorize another to, publish or disseminate commercial advertisements, press releases, feature articles, or other materials using the name of County without the prior written consent of the Contract Manager. County shall not unreasonably withhold such written consent.
3. Contractor may, without prior written consent of County, indicate in its proposals and sales materials that it has been awarded this Contract with County, provided that the requirements of this paragraph shall apply.

EE. Public Records Act

1. Any documents submitted by Contractor; all information obtained in connection with County's right to audit and inspect Contractor's documents, books, and accounting records pursuant to this Exhibit's Record Retention and Inspection/Audit Settlement of this Contract; as well as those documents which were required to be submitted in response to the RFP used in the solicitation process for this Contract, become the exclusive property of County. All such documents become a matter of public record and shall be regarded as public records, except those documents that are marked "Trade Secret," "Confidential," or "Proprietary" and are deemed excluded from disclosure under Government Code 6250 et seq. (Public Records Act). County shall not in any way be liable or responsible for the disclosure of any such records including, with limitation, those so marked, if disclosure is required by law, or by an order issued by a court of competent jurisdiction.
2. In the event County is required to defend an action on a Public Records Act request for any of the aforementioned documents, information, books, records, and/or contents of a proposal marked "Trade Secret," "Confidential," or "Proprietary," Contractor agrees to defend and indemnify County from all costs and expenses, including reasonable attorney's fees, in connection with any requested action or liability arising under the Public Records Act.

FF. Record Retention and Inspection/Audit Settlement

Contractor shall maintain accurate and complete financial records of its activities and operations relating to this Contract in accordance with generally accepted accounting principles. Contractor shall also maintain accurate and complete employment and other records relating to its performance of this Contract. Contractor agrees that County, or its authorized representatives, shall have access to and the right to examine, audit, excerpt, copy, or transcribe any pertinent transaction, activity, or record relating to this Contract. All such material including, but not limited to, all financial records, bank statements, cancelled checks, or other proof of payment, timecards, sign-in/sign-out sheets, and other time and employment records, and proprietary data and information shall be kept and maintained by Contractor and shall be made available to County during the term of this Contract and for a period of five years thereafter unless County's written permission is given to dispose of any such material prior to such time. All such material shall be maintained by Contractor at a location in County, provided that if any such material is located outside County, then, at County's option, Contractor shall pay County for travel, per diem, and other costs incurred by County to examine, audit, excerpt, copy, or transcribe such material at such other location.

1. In the event that an audit of Contractor is conducted specifically regarding this Contract by any Federal or State auditor, or by any auditor or accountant employed by Contractor or otherwise, then Contractor shall file a copy of such audit report with County's Auditor-Controller within 30 days of Contractor's receipt thereof, unless otherwise provided by applicable Federal or State law or under this Contract. Subject to applicable law, County shall make a reasonable effort to maintain the confidentiality of such audit report(s).
2. Failure on the part of Contractor to comply with any of the provisions of this paragraph shall constitute a material breach of this Contract upon which County may suspend or terminate for default or suspend this Contract.
3. If, at any time during the term of this Contract or within five years after the expiration or termination of this Contract, representatives of County conduct an audit of Contractor regarding the work performed under this Contract, and if such audit finds that County's dollar liability for any such work is less than payments made by County to Contractor, then the difference shall be either: a) repaid by Contractor to County by cash payment upon demand or b) at the sole option of County's Auditor-Controller, deducted from any amounts due to Contractor from County, whether under this Contract or otherwise. If such audit finds that County's dollar liability for such work is more than the payments made by County to Contractor, then the difference shall be paid to Contractor by County by cash payment, provided that in no event shall County's maximum obligation for this Contract exceed the funds appropriated by County for the purpose of this Contract.

GG. Recycled-Content Paper Products

Consistent with Board policy to reduce the amount of solid waste deposited at County landfills, Contractor agrees to use recycled-content paper to the maximum extent possible under this Contract.

HH. Contractor's Employee Criminal Background Investigation

Each of the Contractor's or Subcontractor's staff performing services under this Contract who is in a designated sensitive position, as determined by the County in County's sole discretion, shall undergo and pass a background investigation to the satisfaction of County as a condition of beginning and continuing to perform services under this Contract. Such background investigation must be obtained through fingerprints submitted to the California Department of Justice to include State and local-level review, which may include, but shall not be limited to, criminal conviction information. The fees associated with the background investigation shall be at the expense of the Contractor, regardless of whether the member of Contractor's staff passes or fails the background investigation.

If a member of Contractor's staff does not pass the background investigation, County may request that the member of Contractor's staff be removed immediately from performing services under the Contract. Contractor shall comply with County's request at any time during the term of the Contract. County will not provide to Contractor or to Contractor's staff any information.

## II. Subcontracting

The requirements of this Contract may not be Subcontracted by Contractor without the advance written approval of County. Any attempt by Contractor to Subcontract without the prior written consent of County may be deemed a material breach of this Contract and the County may suspend or terminate for this Contract default.

1. If Contractor desires to Subcontract, Contractor shall provide the following information promptly at County's request:
  - a. A description of the work to be performed by the Subcontractor.
  - b. A draft copy of the proposed Subcontract.
  - c. Other pertinent information and/or certifications requested by County.
2. Contractor shall indemnify, defend, and hold County harmless with respect to the activities of each and every Subcontractor in the same manner and to the same degree as if such Subcontractor(s) were Contractor employees.
3. Contractor shall remain fully responsible for all performances required of it under this Contract, including those that the Contractor has determined to Subcontract, notwithstanding County's approval of Contractor's proposed Subcontract.
4. County's consent to Subcontract shall not waive County's right to prior and continuing approval of any and all personnel, including Subcontractor employees, providing services under this Contract. Contractor is responsible to notify its Subcontractors of this County right.
5. County's Contract Manager is authorized to act for and on behalf of County with respect to approval of any Subcontract and Subcontractor employees.
6. Contractor shall be solely liable and responsible for all payments or other compensation to all Subcontractors and their officers, employees, agents, and successors in interest arising through services performed hereunder, notwithstanding County's consent to Subcontract.
7. Contractor shall obtain certificates of insurance, which establish that the Subcontractor maintains all the programs of insurance required by



County from each approved Subcontractor. Contractor shall ensure delivery of all such documents to Administrative Services Division, P.O. Box 1460, Alhambra, California 91802-1460, before any Subcontractor employee may perform any work hereunder.

8. Employee Leasing is prohibited.

JJ. Validity

If any provision of this Contract or the application thereof to any person or circumstance is held invalid, the remainder of this Contract and the application of such provision to other persons or circumstances shall not be affected thereby.

KK. Waiver

No waiver by County of any breach of any provision of this Contract shall constitute a waiver of any other breach of said provision or of any other provision of this Contract. Failure of County to enforce at anytime, or from time to time, any provision of this Contract shall not be construed as a waiver thereof.

LL. Warranty Against Contingent Fees

1. Contractor warrants that no person or selling agency has been employed or retained to solicit or secure this Contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by Contractor for the purpose of securing business.
2. For breach of this warranty, County shall have the right, in its sole discretion, to suspend or terminate this Contract for default, deduct from amounts owing to the Contractor, or otherwise recover, the full amount of such commission, percentage, brokerage, or contingent fee.

MM. Time Off for Voting

The Contractor shall notify its employees, and shall require each Subcontractor to notify and provide to its employees, information regarding the time off for voting law (Elections Code, Section 14000). Not less than ten days before every Statewide election, every Contractor and Subcontractors shall keep posted conspicuously at the place of work, if practicable, or elsewhere where it can be seen as employees come or go to their place of work, a notice setting forth the provisions of Section 14000.

## SECTION 3

### TERMINATIONS/SUSPENSIONS

A. Termination/Suspension for Breach of Warranty to Maintain Compliance with County's Child Support Compliance Program

Failure of Contractor to maintain compliance with the requirements set forth in this Exhibit's Contractor's Warranty of Adherence to County's Child Support Compliance Program shall constitute a default under this Contract. Without limiting the rights and remedies available to County under any other provision of this Contract, failure of Contractor to cure such default within 90 calendar days of written notice shall be grounds upon which the County may suspend or terminate this Contract pursuant to this Exhibit's Termination/Suspension for Default, and pursue debarment of Contractor pursuant to Los Angeles County Code, Chapter 2.202.

B. Termination/Suspension for Convenience

1. This Contract may be suspended or terminated, in whole or in part, from time to time, when such action is deemed by County, in its sole discretion, to be in its best interest. Suspension or termination of work hereunder shall be effected by notice of suspension or termination to Contractor specifying the extent to which performance of work is suspended or terminated and the date upon which such suspension or termination becomes effective. The date upon which such suspension or termination becomes effective shall be no less than ten days after the notice is sent.
2. After receipt of a notice of suspension or termination and except as otherwise directed by County, Contractor shall:
  - a. Stop work under this Contract on the date and to the extent specified in such notice.
  - b. Complete performance of such part of the work as shall not have been suspended or terminated by such notice.
3. All material including books, records, documents, or other evidence bearing on the costs and expenses of Contractor under this Contract shall be maintained by Contractor in accordance with this Exhibit's Record Retention and Inspection/Audit Settlement.
4. If this Contract is suspended or terminated, Contractor shall complete within the Director's suspension or termination date contain within the notice of suspension or termination, those items of work which are in various stages of completion, which the Director has advised the Contractor are necessary to bring the work to a timely, logical, and orderly

end. Reports, samples, and other materials prepared by Contractor under this Contract shall be delivered to County upon request and shall become the property of County.

C. Termination/Suspension for Default

1. County may, by written notice to Contractor, suspend or terminate the whole or any part of this Contract, if, in the judgment of the County:
  - a. Contractor has materially breached this Contract; or
  - b. Contractor fails to timely provide and/or satisfactorily perform any task, deliverable, service, or other work required under this Contract; or
  - c. Contractor fails to demonstrate a high probability of timely fulfillment of performance requirements under this Contract, or of any obligations of this Contract and in either case, fails to demonstrate convincing progress toward a cure within five working days (or such longer period as County may authorize in writing) after receipt of written notice from County specifying such failure.
2. In the event County suspends or terminates this Contract in whole or in part pursuant to this paragraph, County may procure, upon such terms and in such manner, as County may deem appropriate, goods and services similar to those so suspended or terminated. Contractor shall be liable to County for any and all excess costs incurred by County, as determined by County, for such similar goods and services. Contractor shall continue the performance of this Contract to the extent not suspended or terminated under the provisions of this paragraph.
3. Except with respect to defaults of any Subcontractor, Contractor shall not be liable for any excess costs of the type identified in subparagraph "2" above, if its failure to perform this Contract arises out of causes beyond the control and without the fault or negligence of Contractor. Such causes may include, but are not limited to, acts of God or of the public enemy, acts of County in either its sovereign or contractual capacity, acts of the Federal or State government in its sovereign capacity, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and unusually severe weather; but in every case, the failure to perform must be beyond the control and without the fault or negligence of Contractor. If the failure to perform is caused by the default of a Subcontractor, and if such default arises out of causes beyond the control of both Contractor and Subcontractor, and without the fault or negligence of either of them, Contractor shall not be liable for any such excess costs for failure to perform, unless the goods or services to be furnished by the Subcontractor were obtainable from other sources in sufficient time to permit Contractor to meet the required delivery schedule.

4. If, after County has given notice of termination or suspension under the provisions of this paragraph, it is determined by County that Contractor was not in default under the provisions of this paragraph or that the default was excusable under the provisions of this paragraph, the rights and obligations of the parties shall be the same as if the notice of termination or suspension had been issued pursuant to this Exhibit's Termination/Suspension for Convenience.
5. The rights and remedies of County provided in this paragraph shall not be exclusive and are in addition to any other rights and remedies provided by law or under this Contract.
6. As used herein, the terms "Subcontractor" and "Subcontractors" mean subcontractor at any tier.

D. Termination/Suspension for Improper Consideration

1. County may, by written notice to Contractor, immediately suspend or terminate the right of Contractor to proceed under this Contract if it is found that consideration, in any form, was offered or given by Contractor, either directly or through an intermediary, to any County officer, employee, or agent with the intent of securing this Contract or securing favorable treatment with respect to the award, amendment, extension of this Contract, or the making of any determinations with respect to Contractor's performance pursuant to this Contract. In the event of such termination or suspension, County shall be entitled to pursue those same remedies against Contractor as it could pursue in the event of default by Contractor.
2. Contractor shall immediately report any attempt by a County officer or employee to solicit such improper consideration. The report shall be made either to County manager charged with the supervision of the employee or to County Auditor-Controller's Employee Fraud Hotline at (800) 544-6861.
3. Among other items, such improper consideration may take the form of cash; discounts; services; the provision of travel, entertainment, or tangible gifts.

E. Termination/Suspension for Insolvency

1. County may suspend or terminate this Contract forthwith in the event of the occurrence of any of the following:
  - a. Insolvency of Contractor. Contractor shall be deemed to be insolvent if it has ceased to pay its debts for at least 60 days in the ordinary course of business or cannot pay its debts as they become

due, whether or not a petition has been filed under the Federal Bankruptcy Code, and whether or not Contractor is insolvent within the meaning of the Federal Bankruptcy Code.

- b. The filing of a voluntary or involuntary bankruptcy petition relative to Contractor under the Federal Bankruptcy Code.
  - c. The appointment of a bankruptcy Receiver or Trustee for Contractor.
  - d. The execution by Contractor of a general assignment for the benefits of creditors.
2. The rights and remedies of County provided in this paragraph shall not be exclusive and are in addition to any other rights and remedies provided by law or under this Contract.

F. Termination/Suspension for Nonadherence to County Lobbyists Ordinance

Contractor, and each County lobbyist or County lobbying firm as defined in Los Angeles County Code, Section 2.160.010, retained by Contractor, shall fully comply with County's Lobbyist Ordinance, Los Angeles County Code, Chapter 2.160. Failure on the part of Contractor or any County Lobbyists or County Lobbying firm retained by Contractor to fully comply with County's Lobbyist Ordinance shall constitute a material breach of this Contract, upon which County may in its sole discretion, immediately suspend or terminate for default of this Contract.

G. Termination/Suspension for Nonappropriation of Funds

Notwithstanding any other provision of this Contract, County shall not be obligated for Contractor's performance hereunder or by any provision of this Contract during any of County's future fiscal years unless and until the Board appropriates funds for this Contract in County's budget for each such future fiscal year. In the event that funds are not appropriated for this Contract, then this Contract may be suspended or terminated as of June 30 of the last fiscal year for which funds were appropriated. County will notify Contractor in writing of any such nonallocation of funds at the earliest possible date.

## SECTION 4

### GENERAL CONDITIONS OF CONTRACT WORK

A. Authority of Public Works and Inspection

The Director will have the final authority in all matters affecting the work covered by this Contract's Terms, Requirement, Conditions, and Specifications. On all questions relating to work acceptability or interpretations of these Terms, Requirements, Conditions, and Specifications, the decision of the Director will be final.

B. Cooperation

Contractor shall cooperate with Public Works' forces engaged in any other activities at the jobsite. Contractor shall carry out all work in a diligent manner and according to instructions of the Director.

C. Cooperation and Collateral Work

Contractor shall perform work as directed by the Director. The Director will be supported by other Public Works personnel in assuring satisfactory performance of the work under these Specifications and that satisfactory Contract controls and conditions are maintained.

D. Equipment, Labor, Supervision, and Materials

All equipment, labor, supervision, and materials required to accomplish this Contract, except as might be specifically outlined in other sections, shall be provided by Contractor.

E. Gratuitous Work

Contractor agrees that should work be performed outside the Scope of Work indicated and without Public Works' prior written approval in accordance with this Exhibit's Amendments, such work shall be deemed to be a gratuitous effort by Contractor, and Contractor shall have no claim against County.

F. Jobsite Safety

Contractor shall be solely responsible for ensuring that all work performed under this Contract is performed in strict compliance with all applicable Federal, State, and local occupational safety regulations. Contractor shall provide at its expense all safeguards, safety devices, and protective equipment and shall take any and all actions appropriate to providing a safe jobsite.

G. Labor

No person shall be employed on any work under this Contract who is found to be intemperate, troublesome, disorderly, or is otherwise objectionable to Public Works. Any such person shall be reassigned immediately and not again employed on Public Works' projects or providing services.

H. Labor Law Compliance

Contractor, its agents, and employees shall be bound by and shall comply with all applicable provisions of the Labor Code of the State of California as well as all other applicable Federal, State, and local laws related to labor including compliance with prevailing wage laws. The Contractor is responsible for selecting the classification of workers, which will be required to perform this service in accordance with the Contractor's method of performing the work and when applicable, is required to pay current prevailing wage rates adopted by the Director of the Department of Industrial Relations and will indemnify the County for any claims resulting from their failure to so comply. Contractor shall comply with Labor Code, Section 1777.5, with respect to the employment of apprentices.

I. Overtime

Eight hours labor constitutes a legal day's work. Work in excess thereof, or greater than 40 hours during any one week, shall be permitted only as authorized by and in accordance with Labor Code, Section 1815 et seq.

J. Permits/Licenses

Contractor shall be fully responsible for possessing or obtaining all permits/licenses, except as might be specifically outlined in other sections, from the appropriate Federal, State, or local authorities relating to work to be performed under this Contract.

K. Prohibition Against Use of Child Labor

1. Contractor shall:

- a. Not knowingly sell or supply to County any products, goods, supply, or other personal property manufactured in violation of child labor standards set by the International Labor Organization through its 1973 Convention Concerning Minimum Age for Employment.
- b. Upon request by County, identify the country/countries of origin of any products, goods, supplies, or other personal property Contractor sells or supplies to County.

- c. Upon request by County, provide to County the manufacturer's certification of compliance with all international child labor conventions.
  - d. Should County discover that any products, goods, supplies, or other personal property sold or supplied by Contractor to County are produced in violation of any international child labor conventions, Contractor shall immediately provide an alternative, compliant source of supply.
2. Failure by Contractor to comply with provisions of this paragraph will constitute a material breach of this Contract and will be grounds for immediate suspension or termination of this Contract for default.

L. Public Convenience

Contractor shall conduct operations to cause the least possible obstruction and inconvenience to public traffic or disruption to the peace and quiet of the area within which the work is being performed.

M. Public Safety

It shall be Contractor's responsibility to maintain security against public hazards at all times while performing work at contracted work locations. In the event Contractor determines a public hazard exists at a work location, Contractor shall immediately mark the location to prevent public access to the hazard and immediately notify the Contract Manager.

N. Quality of Work

Contractor shall provide the County high and consistent quality work under this Contract and which is at least equivalent to that which Contractor provides to all other clients it serves. All work shall be executed by experienced and well-trained workers. All work shall be under supervision of a well-qualified supervisor. Contractor also agrees that work shall be furnished in a professional manner and according to these Specifications.

O. Quantities of Work

Contractor shall be allowed no claims for anticipated profits or for any damages of any sort because of any difference between the work estimated by Contractor in responding to County's solicitation and actual quantities of work done under this Contract or for work decreased or eliminated by County.

P. Safety Requirements

Contractor shall be responsible for the safety of equipment, material, and personnel under Contractor's jurisdiction during the work.



Q. Storage of Material and Equipment

Contractor shall not store material or equipment at the jobsite, except as might be specifically authorized by this Contract. County will not be liable or responsible for any damage, by whatever means, or for the theft of Contractor's material or equipment from any jobsite.

R. Transportation

County will not provide transportation to and from the jobsite and will not provide travel around the limits of the jobsite.

S. Work Area Controls

1. Contractor shall comply with all applicable laws and regulations. Contractor shall maintain work area in a neat, orderly, clean, and safe manner. Contractor shall avoid spreading out equipment excessively. Location and layout of all equipment and materials at each jobsite will be subject to the Contract Manager's approval.
2. Contractor shall be responsible for the security of any and all of Public Works/County facilities in its care. Contractor shall provide protection against vandalism and accidental and malicious damage, both during working and nonworking hours.

T. County Contract Database/CARD

The County maintains databases that track/monitor contractor performance history. Information entered into such databases may be used for a variety of purposes, including determining whether the County will exercise a contract term extension option.

## SECTION 5

### INDEMNIFICATION AND INSURANCE REQUIREMENTS

#### A. Independent Contractor Status

1. This Contract is by and between County and Contractor and is not intended, and shall not be construed to create the relationship of agent, servant, employee, partnership, joint venture, or association as between County and Contractor. The employees and agents of one party shall not be, or be construed to be, the employees or agents of the other party for any purpose whatsoever.
2. Contractor shall be solely liable and responsible for providing to, or on behalf of, all persons performing work pursuant to this Contract all compensation and benefits. County shall have no liability or responsibility for the payment of any salaries, wages, unemployment benefits, disability benefits, Federal, State, or local taxes, or other compensation, benefits, or taxes for any personnel provided by or on behalf of Contractor.
3. Contractor understands and agrees that all persons performing work pursuant to this Contract are, for purposes of Workers' Compensation liability, solely employees of Contractor and not employees of County. Contractor shall be solely liable and responsible for furnishing any and all Workers' Compensation benefits to any person as a result of any injuries arising from or connected with any work performed by or on behalf of Contractor pursuant to this Contract.

#### B. Indemnification

Contractor shall indemnify, defend, and hold harmless the County of Los Angeles, its Special Districts, Elected Officials, Appointed Officers, Agents, Employees, and Volunteers ("County Indemnities"), from and against any and all liability including, but not limited to, demands, claims, actions, fees, costs, and expenses of any nature whatsoever (including attorney and expert witness fees), arising from or connected with Contractor's acts and/or omissions arising from and/or relating to this Contract except for loss or damage arising from the sole negligence or willful misconduct of the County Indemnities. This indemnification also shall include any and all intellectual property liability, including copyright infringement and similar claims.

#### C. Workplace Safety Indemnification

In addition to and without limiting the indemnification required by this Exhibit's Section 5.B (above), and to the extent allowed by law, Contractor agrees to defend, indemnify, and hold harmless the County of Los Angeles, its Special Districts, Elected Officials, Appointed Officers, Agents, Employees, and Volunteers from and against any and all investigations, complaints, citations, liability, expense (including

defense costs and legal fees), claims, and/or causes of action for damages of any nature whatsoever, including, but not limited to, injury or death to employees of Contractor, its Subcontractors or County, attributable to any alleged act or omission of Contractor and/or its Subcontractors which is in violation of any Cal/OSHA regulation. The obligation to defend, indemnify, and hold harmless County includes all investigations and proceedings associated with purported violations of Section 336.10 of Title 8 of the California Code of Regulations pertaining to multiemployer worksites. Contractor shall not be obligated to indemnify for liability and expenses arising from the active negligence of County. County may deduct from any payment otherwise due Contractor any costs incurred or anticipated to be incurred by County, including legal fees and staff costs, associated with any investigation or enforcement proceeding brought by Cal/OSHA arising out of the work being performed by Contractor under this Contract.

D. General Insurance Requirements

1. Without limiting Contractor's indemnification of County, and in the performance of this Contract and until all of its obligations pursuant to this Contract have been met, Contractor shall provide and maintain at its own expense insurance coverage satisfying the requirements specified in this paragraph and paragraph F of this Section. These minimum insurance coverage terms, types, and limits (the "Required Insurance") also are in addition to and separate from any other contractual obligation imposed upon Contractor pursuant to this Contract. The County in no way warrants that the Required Insurance is sufficient to protect the Contractor for liabilities which may arise from or relate to this Contract.
2. Evidence of Coverage and Notice to County - A certificate(s) of insurance coverage (Certificate) satisfactory to County, and a copy of an Additional Insured endorsement confirming the County of Los Angeles, its Special Districts, Elected Officials, Officers, Agents, Employees, and Volunteers has been given Insured status under the Contractor's General Liability policy, shall be delivered to County at the address shown below and provided prior to commencing services under this Contract.
  - a. Renewal Certificates shall be provided to County not less than ten days prior to Contractor's policy expiration dates. The County reserves the right to obtain complete, certified copies of any required Contractor and/or Subcontractor insurance policies at any time.
  - b. Certificates shall identify all Required Insurance coverage types and limits specified herein, reference this Contract by name or number, and be signed by an authorized representative of the insurer(s). The Insured party named on the Certificate shall match the name of the Contractor identified as the contracting party in this Contract. Certificates shall provide the full name of each insurer

providing coverage, its NAIC (National Association of Insurance Commissioners) identification number, its financial rating, the amounts of any policy deductibles or self-insured retentions exceeding \$50,000.00, and list any County-required endorsement forms.

- c. Neither the County's failure to obtain, nor the County's receipt of, or failure to object to a noncomplying insurance certificate or endorsement, or any other insurance documentation or information provided by the Contractor, its insurance broker(s) and/or insurer(s), shall be construed as a waiver of any of the Required Insurance provisions.

- d. Certificates and copies of any required endorsements shall be sent to:

County of Los Angeles  
Department of Public Works, Administrative Services Division  
P.O. Box 1460  
Alhambra, California 91802-1460  
Attention of: Contract Analyst (noted in the RFP Notice)

- e. Contractor also shall promptly report to County any injury or property damage accident or incident, including any injury to a Contractor employee occurring on County property, and any loss, disappearance, destruction, misuse, or theft of County property, monies or securities entrusted to Contractor. Contractor also shall promptly notify County of any third-party claim or suit filed against Contractor or any of its Subcontractors which arises from or relates to this Contract, and could result in the filing of a claim or lawsuit against Contractor and/or County.

- 3. Additional Insured Status and Scope of Coverage - The County of Los Angeles, its Special Districts, Elected Officials, Officers, Agents, Employees, and Volunteers shall be provided additional insured status under Contractor's General Liability policy with respect to liability arising out of Contractor's ongoing and completed operations performed on behalf of the County. The County of Los Angeles, its Special Districts, Elected Officials, Officers, Agents, Employees, and Volunteers additional insured status shall apply with respect to liability and defense of suits arising out of the Contractor's acts or omissions, whether such liability is attributable to the Contractor or to the County. The full policy limits and scope of protection also shall apply to the County of Los Angeles, its Special Districts, Elected Officials, Officers, Agents, Employees,

and Volunteers as an additional insured, even if they exceed the County's minimum Required Insurance specifications herein. Use of an automatic additional insured endorsement form is acceptable providing it satisfies the Required Insurance provisions herein.

4. Cancellation of or Changes in Insurance: Contractor shall provide County with, or Contractor's insurance policies shall contain a provision that County shall receive, written notice of cancellation or any change in Required Insurance, including insurer, limits of coverage, term of coverage or policy period. The written notice shall be provided to County at least ten days in advance of cancellation for nonpayment of premium and 30 days in advance for any other cancellation or policy change. Failure to provide written notice of cancellation or any change in Required Insurance may constitute a material breach of the Contract, in the sole discretion of the County, upon which the County may suspend or terminate this Contract.
5. Failure to Maintain Insurance: Contractor's failure to maintain or to provide acceptable evidence that it maintains the Required Insurance shall constitute a material breach of the Contract, upon which County immediately may withhold payments due to Contractor, and/or suspend or terminate this Contract. County, at its sole discretion, may obtain damages from Contractor resulting from said breach. Alternatively, the County may purchase the Required Insurance, and without further notice to Contractor, deduct the premium cost from sums due to Contractor or pursue Contractor reimbursement.
6. Insurer Financial Ratings: Coverage shall be placed with insurers acceptable to the County with A.M. Best ratings of not less than A:VII unless otherwise approved by County.
7. Contractor's Insurance Shall Be Primary: Contractor's insurance policies, with respect to any claims related to this Contract, shall be primary with respect to all other sources of coverage available to Contractor. Any County-maintained insurance or self-insurance coverage shall be in excess of and not contribute to any Contractor coverage.
8. Waivers of Subrogation: To the fullest extent permitted by law, the Contractor hereby waives its rights and its insurer(s)' rights of recovery against County under all the Required Insurance for any loss arising from or relating to this Contract. The Contractor shall require its insurers to execute any waiver of subrogation endorsements which may be necessary to effect such waiver.
9. Subcontractor Insurance Coverage Requirements: Contractor shall include all Subcontractors as insureds under Contractor's own policies, or shall provide County with each Subcontractor's separate evidence of

insurance coverage. Contractor shall be responsible for verifying each Subcontractor complies with the Required Insurance provisions herein, and shall require that each Subcontractor name the County of Los Angeles, its Special Districts, Elected Officials, Officers, Agents, Employees, Volunteers, and Contractor as additional insureds on the Subcontractor's General Liability policy. Contractor shall obtain County's prior review and approval of any Subcontractor request for modification of the Required Insurance.

10. Deductibles and Self-Insured Retentions (SIRs): Contractor's policies shall not obligate the County to pay any portion of any Contractor deductible or SIR. The County retains the right to require Contractor to reduce or eliminate policy deductibles and SIRs as respects the County, or to provide a bond guaranteeing Contractor's payment of all deductibles and SIRs, including all related claims investigation, administration, and defense expenses. Such bond shall be executed by a corporate surety licensed to transact business in the State of California.
11. Claims Made Coverage: If any part of the Required Insurance is written on a claims made basis, any policy retroactive date shall precede the effective date of this Contract. Contractor understands and agrees it shall maintain such coverage for a period of not less than three years following Contract expiration, termination, or cancellation.
12. Application of Excess Liability Coverage: Contractors may use a combination of primary, and excess insurance policies which provide coverage as broad as ("follow form" over) the underlying primary policies, to satisfy the Required Insurance provisions.
13. Separation of Insureds: All liability policies shall provide cross-liability coverage as would be afforded by the standard ISO (Insurance Services Office, Inc.) separation of insureds provision with no insured versus insured exclusions or limitations.
14. Alternative Risk Financing Programs: The County reserves the right to review, and then approve, Contractor use of self-insurance, risk retention groups, risk purchasing groups, pooling arrangements, and captive insurance to satisfy the Required Insurance provisions. The County of Los Angeles, its Special Districts, Elected Officials, Officers, Agents, Employees, and Volunteers shall be designated as an Additional Covered Party under any approved program.
15. County Review and Approval of Insurance Requirements: The County reserves the right to review and adjust the Required Insurance provisions, conditioned upon County's determination of changes in risk exposures.

E. Compensation for County Costs

In the event that the Contractor fails to comply with any of the indemnification or insurance requirements of this Contract, and such failure to comply results in any costs to the County, the Contractor shall pay full compensation for all costs incurred by the County.

F. Insurance Coverage Requirements

1. Commercial General Liability insurance (providing scope of coverage equivalent to ISO policy form CG 00 01), naming The County of Los Angeles, its Special Districts, Elected Officials, Officers, Agents, Employees, and Volunteers as an additional insured, with limits of not less than:

General Aggregate:	\$2 million
Products/Completed Operations Aggregate:	\$1 million
Personal and Advertising Injury:	\$1 million
Each Occurrence:	\$1 million

2. Automobile Liability insurance (providing scope of coverage equivalent to ISO policy form CA 00 01) with limits of not less than \$1 million for bodily injury and property damage, in combined or equivalent split limits, for each single accident. Insurance shall cover liability arising out of Contractor's use of autos pursuant to this Contract, including owned, leased, hired, and/or nonowned autos, as each may be applicable.
3. Workers Compensation and Employers' Liability insurance or qualified self-insurance satisfying statutory requirements, which includes Employers' Liability coverage with limits of not less than \$1 million per accident. If Contractor is a temporary staffing firm or a professional employer organization (PEO), coverage also shall include an Alternate Employer Endorsement (providing scope of coverage equivalent to ISO policy form WC 00 03 01 A) naming the County as the Alternate Employer, and the endorsement form shall be modified to provide that County will receive not less than 30 days advance written notice of cancellation of this coverage provision. If applicable to Contractor's operations, coverage also shall be arranged to satisfy the requirements of any Federal workers or workmen's compensation law or any Federal occupational disease law.
4. Sexual Misconduct Liability: Insurance covering actual or alleged claims for sexual misconduct and/or molestation with limits of not less than \$2 million per claim and \$2 million aggregate, and claims for negligent employment, investigation, supervision, training or retention of, or failure to report to proper authorities, a person(s) who committed any act of abuse, molestation, harassment, mistreatment or maltreatment of a sexual nature.

5. Pollution Liability Insurance: Such insurance shall cover liability arising from the release, discharge, escape, dispersal, or emission of pollutants, whether gradual or sudden, and include coverage for the costs and expenses associated with voluntary clean-up, testing, monitoring, and treatment of pollutants in compliance with governmental mandate or requests. Motor vehicle pollution liability will be required under the Automobile Liability Insurance indicated above for removal of pollutants from worksite. Contractor shall maintain limits of not less than \$2 million per occurrence and \$4 million aggregate.



## SECTION 6

### CONTRACTOR RESPONSIBILITY AND DEBARMENT

A. Responsible Contractor

A responsible Contractor is a Contractor who has demonstrated the attribute of trustworthiness as well as quality, fitness, capacity, and experience to satisfactorily perform the contract. It is County's policy to conduct business only with responsible Contractors.

B. Chapter 2.202 of the County Code

Contractor is hereby notified that, in accordance with Chapter 2.202 of County Code, if County acquires information concerning the performance of Contractor on this or other Contracts which indicates that Contractor is not responsible, County may, in addition to other remedies provided in this Contract, debar Contractor from bidding or proposing on, being awarded, and/or performing work on County Contracts for a specified period of time, which generally will not exceed five years but may exceed five years or be permanent if warranted by the circumstances, and suspend or terminate any or all existing Contracts Contractor may have with County.

C. Nonresponsible Contractor

County may debar a Contractor if the Board finds, in its discretion, that Contractor has done any of the following: (1) violated any term of a contract with County or a nonprofit corporation created by County; (2) committed an act or omission which negatively reflects on Contractor's quality, fitness, or capacity to perform a contract with County, any other public entity, or a nonprofit corporation created by County, or engaged in a pattern or practice which negatively reflects on same; (3) committed an act or offense which indicates a lack of business integrity or business honesty; or (4) made or submitted a false claim against County or any other public entity.

D. Contractor Hearing Board

1. If there is evidence that Contractor may be subject to debarment, Public Works will notify Contractor in writing of the evidence which is the basis for the proposed debarment and will advise Contractor of the scheduled date for a debarment hearing before Contractor Hearing Board.
2. Contractor Hearing Board will conduct a hearing where evidence on the proposed debarment is presented. Contractor and/or Contractor's representative shall be given an opportunity to submit evidence at that hearing. After the hearing, Contractor Hearing Board will prepare a tentative proposed decision, which shall contain a recommendation regarding whether Contractor should be debarred, and, if so,

the appropriate length of time of the debarment. Contractor and Public Works shall be provided an opportunity to object to the tentative proposed decision prior to its presentation to the Board.

3. After consideration of any objections, or if no objections are submitted, a record of the hearing, the proposed decision, and any other recommendation of Contractor Hearing Board shall be presented to the Board. The Board shall have the right to modify, deny, or adopt the proposed decision and recommendation of Contractor Hearing Board.
4. If a Contractor has been debarred for a period longer than five years, that Contractor may, after the debarment has been in effect for at least five years, submit a written request for review of the debarment determination to reduce the period of debarment or terminate the debarment. County may, in its discretion, reduce the period of debarment or terminate the debarment if it finds that Contractor has adequately demonstrated one or more of the following: (1) elimination of the grounds for which the debarment was imposed; (2) a bona fide change in ownership or management; (3) material evidence discovered after debarment was imposed; or (4) any other reason that is in the best interests of County.
5. Contractor Hearing Board will consider a request for review of a debarment determination only where (1) Contractor has been debarred for a period longer than five years; (2) the debarment has been in effect for at least five years; and (3) the request is in writing, states one or more of the grounds for reduction of the debarment period or termination of the debarment, and includes supporting documentation. Upon receiving an appropriate request, Contractor Hearing Board will provide notice of the hearing on the request. At the hearing, Contractor Hearing Board shall conduct a hearing where evidence on the proposed reduction of debarment period or termination of debarment is presented. This hearing shall be conducted and the request for review decided by Contractor Hearing Board pursuant to the same procedure as for a debarment hearing.
6. Contractor Hearing Board's proposed decision shall contain a recommendation on the request to reduce the period of debarment or terminate the debarment. Contractor Hearing Board shall present its proposed decision and recommendation to the Board. The Board shall have the right to modify, deny, or adopt the proposed decision and recommendation of Contractor Hearing Board.

E. Subcontractors of Contractor

These terms shall also apply to Subcontractors of County contractors.

## SECTION 7

### COMPLIANCE WITH COUNTY'S JURY SERVICE PROGRAM

#### A. Jury Service Program

This Contract is subject to the provisions of County's ordinance entitled Contractor Employee Jury Service (Jury Service Program) as codified in Sections 2.203.010 through 2.203.090 of the Los Angeles County Code.

#### B. Written Employee Jury Service Policy

1. Unless Contractor has demonstrated to County's satisfaction either that Contractor is not a "Contractor" as defined under the Jury Service Program (Section 2.203.020 of County Code) or that Contractor qualifies for an exception to the Jury Service Program (Section 2.203.070 of County Code), Contractor shall have and adhere to a written policy that provides that its Employees shall receive from Contractor, on an annual basis, no less than five days of regular pay for actual jury service. The policy may provide that Employee deposit any fees received for such jury service with Contractor or that Contractor deduct from the Employee's regular pay the fees received for jury service.
2. For purposes of this Section, "Contractor" means a person, partnership, corporation, or other entity which has a contract with County or a Subcontract with a County contractor and has received or will receive an aggregate sum of \$50,000 or more in any 12-month period under one or more County Contracts or Subcontracts. "Employee" means any California resident who is a full-time employee of Contractor. "Full-time" means 40 hours or more worked per week, or a lesser number of hours if: 1) the lesser number is a recognized industry standard as determined by County, or 2) Contractor has a long-standing practice that defines the lesser number of hours as full-time. Full-time employees providing short-term, temporary services of 90 days or less within a 12-month period are not considered full-time for purposes of the Jury Service Program. If Contractor uses any Subcontractor to perform services for County under this Contract, the Subcontractor shall also be subject to the provisions of this Section. The provisions of this Section shall be inserted into any such Subcontract agreement and a copy of the Jury Service Program shall be attached to the agreement.
3. If Contractor is not required to comply with the Jury Service Program when this Contract commences, Contractor shall have a continuing obligation to review the applicability of its "exception status" from the Jury Service Program, and Contractor shall immediately notify County if Contractor at any time either comes within the Jury Service Program's definition of "Contractor" or if Contractor no longer qualifies for an exception to the Jury Service Program. In either event, Contractor shall immediately

implement a written policy consistent with the Jury Service Program. County may also require, at any time during this Contract and at its sole discretion, that Contractor demonstrate to County's satisfaction that Contractor either continues to remain outside of the Jury Service Program's definition of "Contractor" and/or that Contractor continues to qualify for an exception to the Jury Service Program.

4. Contractor's violation of this Section of this Contract may constitute a material breach of this Contract. In the event of such material breach, County may, in its sole discretion, suspend or terminate this Contract and/or bar Contractor from the award of future County contracts for a period of time consistent with the seriousness of the breach.

## SECTION 8

### SAFELY SURRENDERED BABY LAW PROGRAM

A. Contractor's Acknowledgment of County's Commitment to the Safely Surrendered Baby Law

Contractor acknowledges that County places a high priority on the implementation of the Safely Surrendered Baby Law. Contractor understands that it is County's policy to encourage all County Contractors to voluntarily post County's "Safely Surrendered Baby Law" poster in a prominent position at Contractor's place of business. Contractor will also encourage its Subcontractors, if any, to post this poster in a prominent position in the Subcontractor's place of business. County's Department of Children and Family Services will supply Contractor with the poster to be used. Information on how to receive the poster can be found on the Internet at [www.babysafela.org](http://www.babysafela.org).

B. Notice to Employees Regarding the Safely Surrendered Baby Law

Contractor shall notify and provide to its employees, and shall require each Subcontractor to notify and provide to its employees, a fact sheet regarding the Safely Surrendered Baby Law, its implementation in County, and where and how to safely surrender a baby. The fact sheet is set forth in Exhibit D of this Contract and is also available on the Internet at [www.babysafela.org](http://www.babysafela.org) for printing purposes.

## SECTION 9

### TRANSITIONAL JOB OPPORTUNITIES PREFERENCE PROGRAM

This Contract is subject to the provisions of the County's ordinance entitled Transitional Job Opportunities Preference Program, as codified in Chapter 2.205 of the Los Angeles County Code.

Contractor shall not knowingly and with the intent to defraud, fraudulently obtain, retain, attempt to obtain or retain, or aid another in fraudulently obtaining or retaining or attempting to obtain or retain certification as a Transitional Job Opportunity vendor.

Contractor shall not willfully and knowingly make a false statement with the intent to defraud, whether by affidavit, report, or other representation, to a County official or employee for the purpose of influencing the certification or denial of certification of any entity as a Transitional Job Opportunities vendor.

If Contractor has obtained County certification as a Transitional Job Opportunities vendor by reason of having furnished incorrect supporting information or by reason of having withheld information, and which knew, or should have known, the information furnished was incorrect or the information withheld was relevant to its request for certification, and which by reason of such certification has been awarded this Contract to which it would not otherwise have been entitled, shall:

1. Pay to the County any difference between the contract amount and what the County's costs would have been if the contract had been properly awarded.
2. In addition to the amount described in subdivision (1), be assessed a penalty in the amount of not more than 10 percent of the amount of this Contract.
3. Be subject to the provisions of Chapter 2.202 of the Los Angeles County Code (Determinations of Contractor Nonresponsibility and Contractor Debarment).

The above penalties shall also apply to any entity that has previously obtained proper certification, however, as a result of a change in their status would no longer be eligible for certification, and fails to notify Public Works of this information prior to responding to a solicitation or accepting a Contract award.

## SECTION 10

### LOCAL SMALL BUSINESS ENTERPRISE (SBE) PREFERENCE PROGRAM

- A. This Contract is subject to the provisions of County's ordinance entitled Local Small Business Enterprise Preference Program, as codified in Chapter 2.204 of the Los Angeles County Code.
- B. Contractor shall not knowingly and with the intent to defraud, fraudulently obtain, retain, attempt to obtain or retain, or aid another in fraudulently obtaining or retaining or attempting to obtain or retain certification as a Local Small Business Enterprise.
- C. Contractor shall not willfully and knowingly make a false statement with the intent to defraud, whether by affidavit, report, or other representation, to a County official or employee for the purpose of influencing the certification or denial of certification of any entity as a Local Small Business Enterprise.
- D. If Contractor has obtained County certification as a Local Small Business Enterprise by reason of having furnished incorrect supporting information or by reason of having withheld information, and which knew, or should have known, the information furnished was incorrect or the information withheld was relevant to its request for certification, and which by reason of such certification has been awarded this Contract to which it would not otherwise have been entitled, shall:
  - 1. Pay to County any difference between this Contract amount and what County's costs would have been if this Contract had been properly awarded.
  - 2. In addition to the amount described in subdivision (1), be assessed a penalty in an amount of not more than 10 percent of the amount of this Contract.
  - 3. Be subject to the provisions of Chapter 2.202 of the Los Angeles County Code (Determinations of Contractor Nonresponsibility and Contractor Debarment).
- E. The above penalties shall also apply if Contractor is no longer eligible for certification as a result of a change of its status and Contractor failed to notify the State and Internal Services Department of this information.

## SECTION 11

### COMPLIANCE WITH COUNTY'S DEFAULTED PROPERTY TAX REDUCTION PROGRAM

A. Defaulted Property Tax Reduction Program

This Contract is subject to the provisions of County's ordinance entitled Defaulted Property Tax Reduction Program ("Defaulted Tax Program") as codified in Sections 2.206 of the Los Angeles County Code (Exhibit E).

B. Contractor's Warranty of Compliance with County's Defaulted Property Tax Reduction Program

Contractor acknowledges that County has established a goal of ensuring that all individuals and businesses that benefit financially from the County through any contract are current in paying their property tax obligations (secured and unsecured roll) in order to mitigate the economic burden otherwise imposed upon the County and its taxpayers.

Unless Contractor qualifies for an exemption or exclusion, Contractor warrants and certifies that to the best of its knowledge it is now in compliance, and during the term of this contract will maintain compliance, with Los Angeles County Code, Chapter 2.206.

C. Termination for Breach of Warranty of Compliance with County's Defaulted Property Tax Reduction Program

Failure of Contractor to maintain compliance with the requirements set forth in paragraph B, above, shall constitute default under this Contract. Without limiting the rights and remedies available to County under any other provision of this Contract, failure of Contractor to cure such default within ten days of notice shall be grounds upon which County may terminate this Contract and/or pursue debarment of Contractor, pursuant to County Code, Chapter 2.206.



## SECTION 12

### DISABLED VETERAN BUSINESS ENTERPRISE PREFERENCE PROGRAM

- A. This Contract is subject to the provisions of the County's ordinance entitled Disabled Veteran Business Enterprise Preference Program, as codified in Chapter 2.211 of the Los Angeles County Code.
- B. Contractor shall not knowingly and with the intent to defraud, fraudulently obtain, retain, attempt to obtain or retain, or aid another in fraudulently obtaining or retaining or attempting to obtain or retain certification as a Disabled Veteran Business Enterprise.
- C. Contractor shall not willfully and knowingly make a false statement with the intent to defraud, whether by affidavit, report, or other representation, to a County official or employee for the purpose of influencing the certification or denial of certification of any entity as a Disabled Veteran Business Enterprise.
- D. If Contractor has obtained certification as a Disabled Veteran Business Enterprise by reason of having furnished incorrect supporting information or by reason of having withheld information, and which knew, or should have known, the information furnished was incorrect or the information withheld was relevant to its request for certification, and which by reason of such certification has been awarded this contract to which it would not otherwise have been entitled, shall:
  - a. Pay to the County any difference between the Contract amount and what the County's costs would have been if the Contract had been properly awarded.
  - b. In addition to the amount described in subdivision (1), be assessed a penalty in an amount of not more than 10 percent of the amount of the Contract.
  - c. Be subject to the provisions of Chapter 2.202 of the Los Angeles County Code (Determinations of Contractor Nonresponsibility and Contractor Debarment).
- E. The above penalties shall also apply to any business that has previously obtained proper certification, however, as a result of a change in their status would no longer be eligible for certification, and fails to notify the State and Public Works of this information prior to responding to a solicitation or accepting a Contract award.

## SECTION 13

### PROPRIETARY CONSIDERATIONS

#### A. Ownership of County Materials

Contractor and County agree that all materials including, but not limited to, designs, specifications, techniques, plans, reports, deliverables, data, photographs, diagrams, maps, images, graphics, text, videos, advertising, software, source codes, website plans and designs, interactive media, drafts, working papers, outlines, sketches, summaries, edited and/or unedited versions of deliverables, and any other materials or information developed under this Contract and any and all Intellectual Property rights to these materials, including any copyrights, trademarks, service marks, trade secrets, trade names, unpatented inventions, patent applications, patents, design rights, domain rights, know-how, and any other proprietary rights and derivatives thereof, is and shall be the sole property of County (hereafter collectively, "County Materials"). Contractor hereby assigns and transfers to County all Contractor's rights, titles, and interest in and to all such County Materials developed under this Contract.

Notwithstanding such County ownership in the County Materials, Contractor may retain possession of working papers and materials prepared by Contractor under this Contract. During and for a minimum of five years subsequent to the term of this Contract, County shall have the right to inspect any and all such working papers and materials, make copies thereof and use the working papers and materials and the information contained therein.

#### B. Transfer to County

Contractor shall execute all documents requested by County and shall perform all other acts requested by County to assign and transfer to, and vest in County, all Contractor's rights, titles, and interest in and to the County Materials, including, but not limited to, any and all copyrights, trademarks, service marks, trade names, unpatented inventions, patent applications, patents, design rights, domain name rights, know-how, and any other proprietary rights and derivatives thereof resulting from this Contract. County shall have the right to register all applicable copyrights, trademarks, and patents in the name of the County of Los Angeles. Further, County shall have the right to assign, license, or otherwise transfer any and all County's rights, titles, and interest, including, but not limited to, copyrights, trademarks, and patents, in and to the County Materials.

C. Indemnity

Contractor represents and warrants that the County Materials prepared herein under this Contract, is the original work of Contractor and does not infringe upon any Intellectual Property or proprietary rights of third-parties. For those portions of the County Materials that are not the original work of Contractor, Contractor represents and warrants that it has secured all appropriate licenses, rights, and/or permission from appropriate third-parties to include such materials in the County Materials.

Contractor shall defend, indemnify, and hold County harmless against any claims by third-parties based on infringement of copyright, patent, trade secret, trademark, or any other claimed Intellectual Property or proprietary right, arising from County's use of County Materials created and/or prepared by Contractor. Contractor will also indemnify and defend at its sole expense, any action brought against County based on a claim that County Materials furnished hereunder by Contractor and used within the scope of this Contract infringe any copyright, patent, trade secret, trademark, or any other claimed intellectual property or proprietary right of third parties, and Contractor shall pay any costs, damages and attorney's fees incurred by County. County will notify Contractor promptly and in writing of any such action or claim and will permit Contractor to fully participate in the defense thereof.

D. Copyright Notices

Contractor shall affix the following notice to all County Materials: "@ Copyright 2007 (or such other appropriate date of first publication), County of Los Angeles. All Rights Reserved." Contractor shall affix such notice on the title page of all images, photographs, documents and writings; and otherwise as County may direct.

E. Acknowledgement/Attribution

County shall also have the sole right to control the preparation, modification and revisions to, all acknowledgment and/or attribution language for all County Materials resulting from this Contract. County will however, exercise reasonable efforts to honor requests by Contractor seeking removal of all acknowledgment and/or attribution language relating to the Contractor, should Contractor no longer wish to receive attribution for its work on the County Materials.



Department of the Treasury  
Internal Revenue Service

## Notice 1015

(Rev. December 2014)

### Have You Told Your Employees About the Earned Income Credit (EIC)?

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#### What is the EIC?

The EIC is a refundable tax credit for certain workers.

#### Which Employees Must I Notify About the EIC?

You must notify each employee who worked for you at any time during the year and from whom you did not withhold income tax. However, you do not have to notify any employee who claimed exemption from withholding on Form W-4, Employee's Withholding Allowance Certificate.

**Note.** You are encouraged to notify each employee whose wages for 2014 are less than \$52,427 that he or she may be eligible for the EIC.

#### How and When Must I Notify My Employees?

You must give the employee one of the following:

- The IRS Form W-2, Wage and Tax Statement, which has the required information about the EIC on the back of Copy B.
- A substitute Form W-2 with the same EIC information on the back of the employee's copy that is on Copy B of the IRS Form W-2.
- Notice 797, Possible Federal Tax Refund Due to the Earned Income Credit (EIC).
- Your written statement with the same wording as Notice 797.

If you are required to give Form W-2 and do so on time, no further notice is necessary if the Form W-2 has the required information about the EIC on the back of the employee's copy. If a substitute Form W-2 is given on time but does not have the required information, you must

notify the employee within 1 week of the date the substitute Form W-2 is given. If Form W-2 is required but is not given on time, you must give the employee Notice 797 or your written statement by the date Form W-2 is required to be given. If Form W-2 is not required, you must notify the employee by February 9, 2015.

You must hand the notice directly to the employee or send it by first-class mail to the employee's last known address. You will not meet the notification requirements by posting Notice 797 on an employee bulletin board or sending it through office mail. However, you may want to post the notice to help inform all employees of the EIC. You can get copies of the notice from IRS.gov or by calling 1-800-829-3676.

#### How Will My Employees Know If They Can Claim the EIC?

The basic requirements are covered in Notice 797. For more detailed information, the employee needs to see Pub. 596, Earned Income Credit (EIC), or the instructions for Form 1040, 1040A, or 1040EZ.

#### How Do My Employees Claim the EIC?

Eligible employees claim the EIC on their 2014 tax return. Even employees who have no tax withheld from their pay or owe no tax can claim the EIC and get a refund, but they must file a tax return to do so. For example, if an employee has no tax withheld in 2014 and owes no tax but is eligible for a credit of \$800, he or she must file a 2014 tax return to get the \$800 refund.

# *Safely* Surrendered *Baby Law*



*Babies can be safely surrendered  
to staff at any hospital or fire station in Los Angeles County*

**No shame. No blame. No names.**

**In Los Angeles County: 1-877-BABY SAFE • 1-877-222-9723**

[www.babysafela.org](http://www.babysafela.org)



In Los Angeles County: 1-877-BABY SAFE • 1-877-222-0723

www.babysafela.org

# Safely Surrendered Baby Law

## What is the Safely Surrendered Baby Law?

California's Safely Surrendered Baby Law allows parents or other persons, with lawful custody, which means anyone to whom the parent has given permission to confidentially surrender a baby. As long as the baby is three days (72 hours) of age or younger and has not been abused or neglected, the baby may be surrendered without fear of arrest or prosecution.

*Every baby deserves a chance for a healthy life. If someone you know is considering abandoning a baby, let her know there are other options. For three days (72 hours) after birth, a baby can be surrendered to staff at any hospital or fire station in Los Angeles County.*

## How does it work?

A distressed parent who is unable or unwilling to care for a baby can legally, confidentially, and safely surrender a baby within three days (72 hours) of birth. The baby must be handed to an employee at a hospital or fire station in Los Angeles County. As long as the baby shows no sign of abuse or neglect, no name or other information is required. In case the parent changes his or her mind at a later date and wants the baby back, staff will use bracelets to help connect them to each other. One bracelet will be placed on the baby, and a matching bracelet will be given to the parent or other surrendering adult.

## What if a parent wants the baby back?

Parents who change their minds can begin the process of reclaiming their baby within 14 days. These parents should call the Los Angeles County Department of Children and Family Services at 1-800-540-4000.

## Can only a parent bring in the baby?

No. While in most cases a parent will bring in the baby, the Law allows other people to bring in the baby if they have lawful custody.

## Does the parent or surrendering adult have to call before bringing in the baby?

No. A parent or surrendering adult can bring in a baby anytime, 24 hours a day, 7 days a week, as long as the parent or surrendering adult surrenders the baby to someone who works at the hospital or fire station.

## Does the parent or surrendering adult have to tell anything to the people taking the baby?

No. However, hospital or fire station personnel will ask the surrendering party to fill out a questionnaire designed to gather important medical history information, which is very useful in caring for the baby. The questionnaire includes a stamped return envelope and can be sent in at a later time.

## What happens to the baby?

The baby will be examined and given medical treatment. Upon release from the hospital, social workers immediately place the baby in a safe and loving home and begin the adoption process.

## What happens to the parent or surrendering adult?

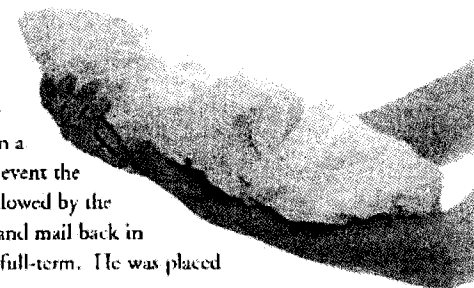
Once the parent or surrendering adult surrenders the baby to hospital or fire station personnel, they may leave at any time.

## Why is California doing this?

The purpose of the Safely Surrendered Baby Law is to protect babies from being abandoned, hurt or killed by their parents. You may have heard tragic stories of babies left in dumpsters or public bathrooms. Their parents may have been under severe emotional distress. The mothers may have hidden their pregnancies, fearful of what would happen if their families found out. Because they were afraid and had no one or nowhere to turn for help, they abandoned their babies. Abandoning a baby is illegal and places the baby in extreme danger. Too often, it results in the baby's death. The Safely Surrendered Baby Law prevents this tragedy from ever happening again in California.

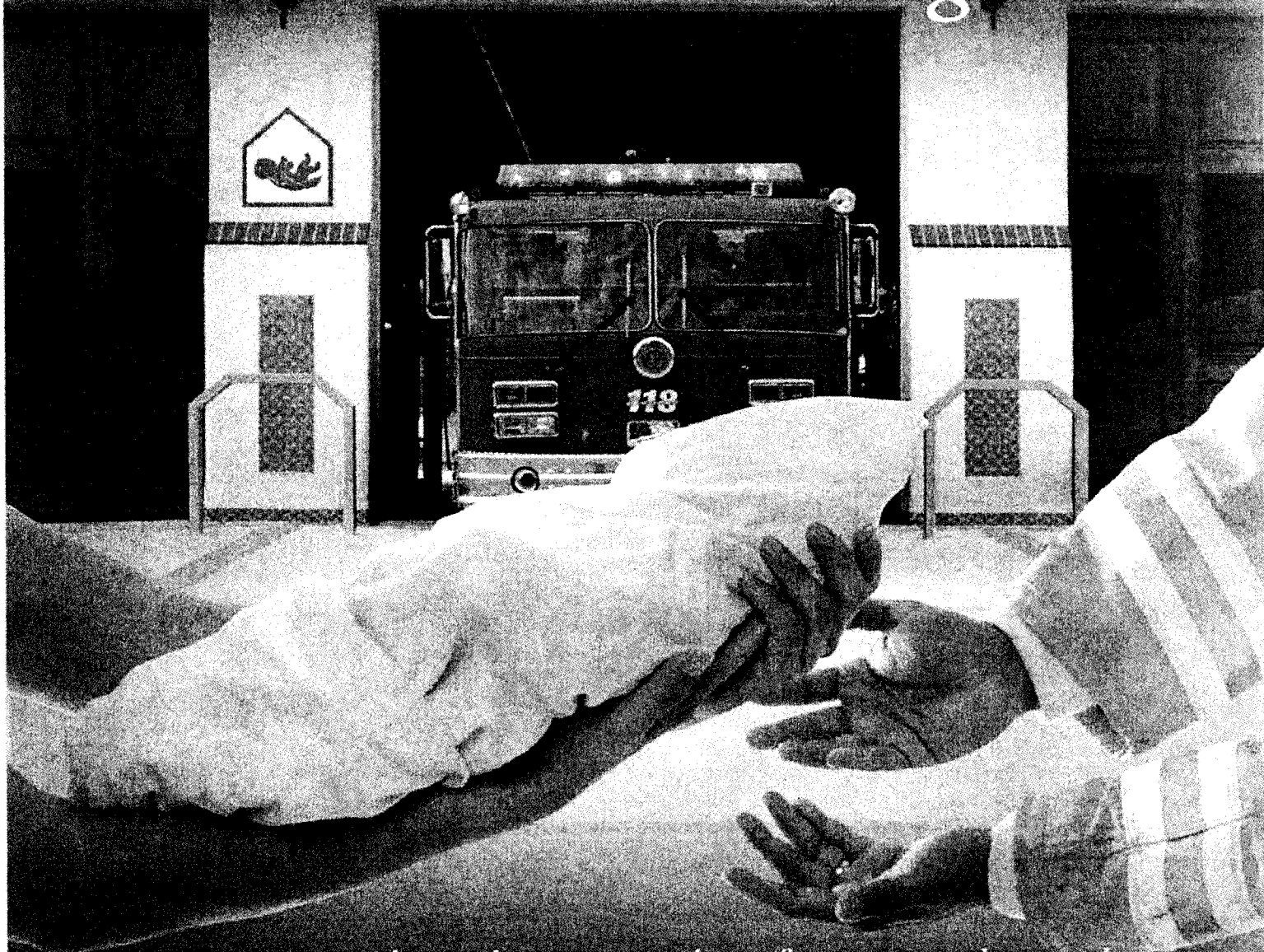
## A baby's story

Early in the morning on April 9, 2005, a healthy baby boy was safely surrendered to nurses at Harbor-UCLA Medical Center. The woman who brought the baby to the hospital identified herself as the baby's aunt and stated the baby's mother had asked her to bring the baby to the hospital on her behalf. The aunt was given a bracelet with a number matching the anklet placed on the baby; this would provide some identification in the event the mother changed her mind about surrendering the baby and wished to reclaim the baby in the 14-day period allowed by the Law. The aunt was also provided with a medical questionnaire and said she would have the mother complete and mail back in the stamped return envelope provided. The baby was examined by medical staff and pronounced healthy and full-term. He was placed with a loving family that had been approved to adopt him by the Department of Children and Family Services.





# *Ley de* Entrega de Bebés *Sin Peligro*



*Los recién nacidos pueden ser entregados en forma segura al personal de cualquier hospital o cuartel de bomberos del Condado de Los Ángeles*

**Sin pena. Sin culpa. Sin nombres.**

**En el Condado de Los Ángeles: 1-877-BABY SAFE • 1-877-222-9723**

[www.babysafeia.org](http://www.babysafeia.org)



# Ley de Entrega de Bebés Sin Peligro

## ¿Qué es la Ley de Entrega de Bebés sin Peligro?

La Ley de Entrega de Bebés sin Peligro de California permite la entrega confidencial de un recién nacido por parte de sus padres u otras personas con custodia legal, es decir cualquier persona a quien los padres le hayan dado permiso. Siempre que el bebé tenga tres días (72 horas) de vida o menos, y no haya sufrido abuso ni negligencia, pueden entregar al recién nacido sin temor de ser arrestados o procesados.

*Cada recién nacido se merece la oportunidad de tener una vida saludable. Si alguien que usted conoce está pensando en abandonar a un recién nacido, infórmele que tiene otras opciones. Hasta tres días (72 horas) después del nacimiento, se puede entregar un recién nacido al personal de cualquier hospital o cuartel de bomberos del condado de Los Angeles.*

## ¿Cómo funciona?

El padre/madre con dificultades que no pueda o no quiera cuidar de su recién nacido puede entregarlo en forma legal, confidencial y segura dentro de los tres días (72 horas) del nacimiento. El bebé debe ser entregado a un empleado de cualquier hospital o cuartel de bomberos del Condado de Los Angeles. Siempre que el bebé no presente signos de abuso o negligencia, no será necesario suministrar nombres ni información alguna. Si el padre/madre cambia de opinión posteriormente y desea recuperar a su bebé, los trabajadores utilizarán brazaletes para poder vincularlos. El bebé llevará un brazalete y el padre/madre o el adulto que lo entregue recibirá un brazalete igual.

## ¿Qué pasa si el padre/madre desea recuperar a su bebé?

Los padres que cambien de opinión pueden comenzar el proceso de reclamar a su recién nacido dentro de los 14 días. Estos padres deberán llamar al Departamento de Servicios para Niños y Familias (Department of Children and Family Services) del Condado de Los Angeles al 1-800-540-4000.

## ¿Sólo los padres podrán llevar al recién nacido?

No. Si bien en la mayoría de los casos son los padres los que llevan al bebé, la ley permite que otras personas lo hagan si tienen custodia legal.

## ¿Los padres o el adulto que entrega al bebé deben llamar antes de llevar al bebé?

No. El padre/madre o adulto puede llevar al bebé en cualquier momento, las 24 horas del día, los 7 días de la semana, siempre y cuando entreguen a su bebé a un empleado del hospital o cuartel de bomberos.

## ¿Es necesario que el padre/madre o adulto diga algo a las personas que reciben al bebé?

No. Sin embargo, el personal del hospital o cuartel de bomberos le pedirá a la persona que entregue al bebé que llene un cuestionario con la finalidad de recabar antecedentes médicos importantes, que resultan de gran utilidad para cuidar bien del bebé. El cuestionario incluye un sobre con el sello postal pagado para enviarlo en otro momento.

## ¿Qué pasará con el bebé?

El bebé será examinado y le brindarán atención médica. Cuando le den el alta del hospital, los trabajadores sociales inmediatamente ubicarán al bebé en un hogar seguro donde estará bien atendido, y se comenzará el proceso de adopción.

## ¿Qué pasará con el padre/madre o adulto que entregue al bebé?

Una vez que los padres o adulto hayan entregado al bebé al personal del hospital o cuartel de bomberos, pueden irse en cualquier momento.

## ¿Por qué se está haciendo esto en California? ?

La finalidad de la Ley de Entrega de Bebés sin Peligro es proteger a los bebés para que no sean abandonados, lastimados o muertos por sus padres. Usted probablemente haya escuchado historias trágicas sobre bebés abandonados en basureros o en baños públicos. Los padres de esos bebés probablemente hayan estado pasando por dificultades emocionales graves. Las madres pueden haber ocultado su embarazo, por temor a lo que pasaría si sus familias se enteraran. Abandonaron a sus bebés porque tenían miedo y no tenían nadie a quien pedir ayuda. El abandono de un recién nacido es ilegal y pone al bebé en una situación de peligro extremo. Muy a menudo el abandono provoca la muerte del bebé. La Ley de Entrega de Bebés sin Peligro impide que vuelva a suceder esta tragedia en California.

## Historia de un bebé

A la mañana temprano del día 9 de abril de 2005, se entregó un recién nacido saludable a las enfermeras del Harbor-UCLA Medical Center. La mujer que llevó el recién nacido al hospital se dio a conocer como la tía del bebé, y dijo que la madre le había pedido que llevara al bebé al hospital en su nombre. Le entregaron a la tía un brazalete con un número que coincidía con la pulsera del bebé; esto serviría como identificación en caso de que la madre cambiara de opinión con respecto a la entrega del bebé y decidiera recuperarlo dentro del período de 14 días que permite esta ley. También le dieron a la tía un cuestionario médico, y ella dijo que la madre lo llenaría y lo enviaría de vuelta dentro del sobre con franqueo pagado que le habían dado. El personal médico examinó al bebé y se determinó que estaba saludable y a término. El bebé fue ubicado con una buena familia que ya había sido aprobada para adoptarlo por el Departamento de Servicios para Niños y Familias.





**Chapter 2.206 DEFAULTED PROPERTY TAX REDUCTION PROGRAM**

- 2.206.010 Findings and declarations.
- 2.206.020 Definitions.
- 2.206.030 Applicability.
- 2.206.040 Required solicitation and contract language.
- 2.206.050 Administration and compliance certification.
- 2.206.060 Exclusions/Exemptions.
- 2.206.070 Enforcement and remedies.
- 2.206.080 Severability.

**2.206.010 Findings and declarations.**

The Board of Supervisors finds that significant revenues are lost each year as a result of taxpayers who fail to pay their tax obligations on time. The delinquencies impose an economic burden upon the County and its taxpayers. Therefore, the Board of Supervisors establishes the goal of ensuring that individuals and businesses that benefit financially from contracts with the County fulfill their property tax obligation. (Ord. No. 2009-0026 § 1 (part), 2009.)

**2.206.020 Definitions.**

The following definitions shall be applicable to this chapter:

- A. "Contractor" shall mean any person, firm, corporation, partnership, or combination thereof, which submits a bid or proposal or enters into a contract or agreement with the County.
- B. "County" shall mean the County of Los Angeles or any public entities for which the Board of Supervisors is the governing body.
- C. "County Property Taxes" shall mean any property tax obligation on the County's secured or unsecured roll; except for tax obligations on the secured roll with respect to property held by a Contractor in a trust or fiduciary capacity or otherwise not beneficially owned by the Contractor.
- D. "Department" shall mean the County department, entity, or organization responsible for the solicitation and/or administration of the contract.
- E. "Default" shall mean any property tax obligation on the secured roll that has been deemed defaulted by operation of law pursuant to California Revenue and Taxation Code section 3436; or any property tax obligation on the unsecured roll that remains unpaid on the applicable delinquency date pursuant to California Revenue and Taxation Code section 2922; except for any property tax obligation dispute pending before the Assessment Appeals Board.

- F. "Solicitation" shall mean the County's process to obtain bids or proposals for goods and services.
- G. "Treasurer-Tax Collector" shall mean the Treasurer and Tax Collector of the County of Los Angeles. (Ord. No. 2009-0026 § 1 (part), 2009.)

**2.206.030 Applicability.**

This chapter shall apply to all solicitations issued 60 days after the effective date of the ordinance codified in this chapter. This chapter shall also apply to all new, renewed, extended, and/or amended contracts entered into 60 days after the effective date of the ordinance codified in this chapter. (Ord. No. 2009-0026 § 1 (part), 2009.)

**2.206.040 Required solicitation and contract language.**

All solicitations and all new, renewed, extended, and/or amended contracts shall contain language, which:

- A. Requires any Contractor to keep County Property Taxes out of Default status at all times during the term of an awarded contract;
- B. Provides that the failure of the Contractor to comply with the provisions in this chapter may prevent the Contractor from being awarded a new contract; and
- C. Provides that the failure of the Contractor to comply with the provisions in this chapter may constitute a material breach of an existing contract, and failure to cure the breach within ten days of notice by the County by paying the outstanding County Property Tax or making payments in a manner agreed to and approved by the Treasurer-Tax Collector, may subject the contract to suspension and/or termination. (Ord. No. 2009-0026 § 1 (part), 2009.)

**2.206.050 Administration and compliance certification.**

- A. The Treasurer-Tax Collector shall be responsible for the administration of this chapter. The Treasurer-Tax Collector shall, with the assistance of the Chief Executive Officer, Director of Internal Services, and County Counsel issue written instructions on the implementation and ongoing administration of this chapter. Such instructions may provide for the delegation of functions to other departments.
- B. Contractor shall be required to certify, at the time of submitting any bid or proposal to the County, or entering into any new contract, or renewal, extension or amendment of an existing contract with the County, that it is in compliance with this chapter is not in Default on any County Property Taxes or is current in

payments due under any approved payment arrangement (Ord. No. 2009-0026 § 1 (part), 2009.)

**2.206.060 Exclusions/Exemptions.**

A. This chapter shall not apply to the following contracts:

1. Chief Executive Office delegated authority agreements under \$50,000;
2. A contract where Federal or State law or a condition of a Federal or State program mandates the use of a particular contractor;
3. A purchase made through a State or Federal contract;
4. A contract where State or Federal monies are used to fund service-related programs including, but not limited to, voucher programs, foster care, or other social programs that provide immediate direct assistance;
5. Purchase orders under a master agreement, where the Contractor was certified at the time the master agreement was entered into and at any subsequent renewal, extension and/or amendment to the master agreement;
6. Purchase orders issued by Internal Services Department under \$100,000 that is not the result of a competitive bidding process;
7. Program agreements that utilize Board of Supervisors' discretionary funds;
8. National contracts established for the purchase of equipment and supplies for and by the National Association of Counties, U.S. Communities Government Purchasing Alliance, or any similar related group purchasing organization;
9. A monopoly purchase that is exclusive and proprietary to a specific manufacturer, distributor, reseller, and must match and intermember with existing supplies, equipment, or systems maintained by the County pursuant to the Los Angeles Purchasing Policy and Procedures Manual, Section P-3700 or a successor provision;
10. A revolving fund (petty cash) purchase pursuant to the Los Angeles County Fiscal Manual, Section 4.6.0 or a successor provision;
11. A purchase card purchase pursuant to the Los Angeles County Purchasing Policy and Procedures Manual, Section P-2810 or a successor provision;

12. A nonagreement purchase worth a value of less than \$5,000 pursuant to the Los Angeles County Purchasing Policy and Procedures Manual, Section A-0300 or a successor provision; or
  13. A bona fide emergency purchase pursuant to the Los Angeles County Purchasing Policy and Procedures Manual Section P-0900 or a successor provision;
  14. Other contracts for mission critical goods and/or services where the Board of Supervisors determines that an exemption is justified.
- B. Other laws. This chapter shall not be interpreted or applied to any Contractor in a manner inconsistent with the laws of the United States or California. (Ord. No. 2009-0026 § 1 (part), 2009.)

**2.206.070 Enforcement and remedies.**

- A. The information furnished by each Contractor certifying that it is in compliance with this chapter shall be under penalty of perjury.
- B. No Contractor shall willfully and knowingly make a false statement certifying compliance with this chapter for the purpose of obtaining or retaining a County contract.
- C. For Contractor's violation of any provision of this chapter, the County department head responsible for administering the contract may do one or more of the following:
1. Recommend to the Board of Supervisors the termination of the contract; and/or,
  2. Pursuant to Chapter 2.202, seek the debarment of the contractor; and/or,
  3. Recommend to the Board of Supervisors that an exemption is justified pursuant to Section 2.206.060.A.14 of this chapter or payment deferral as provided pursuant to the California Revenue and Taxation Code. (Ord. No. 2009-0026 § 1 (part), 2009.)

**2.206.080 Severability.**

If any provision of this chapter is found invalid by a court of competent jurisdiction, the remaining provisions shall remain in full force and effect. (Ord. No. 2009-0026 § 1 (part), 2009.)

# **PERFORMANCE REQUIREMENTS SUMMARY** **CLOUD SEEDING SERVICES**

The items listed under this Performance Requirements Summary (PRS) are not all encompassing, and any conflict or discrepancy between the requirements specified in Exhibits A through J, inclusive, of this Contract (Exhibits A-J) and this PRS, Exhibits A-J shall control. The County reserves the right to modify this PRS at any time consistent with the requirements set forth in Exhibits A-J, to clarify Performance Requirements, or to monitor of any part of this Contract.

Required Service/Tasks	Performance Indicator	Deductions / Consequences for Failure to Meet Performance Indicator*	Compliance	Comments
<b>A. SCOPE OF WORK</b>				
1. Fines by Regulatory and Governmental Agencies	Fined by a local, regional, State, or Federal regulatory or governmental agency as a result of the Contractor's negligence or failure to comply with any Federal, State, or local rules, regulations, or requirements.	\$500 per occurrence plus any fine(s) charged to the County by a regulatory or governmental agency; possible suspension; possible termination for default of contract.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
2. Violation of the National Pollutant Discharge Elimination System	Discharge of debris into storm drains and/or gutter.	\$500 per occurrence plus any fines by regulatory and governmental agencies plus any remediation cost; possible suspension; possible termination for default of contract.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
<b>B. REPORTS/DOCUMENTATION</b>				
1. Cloud Seeding Program Report	Cloud Seeding Program Report submitted to Contract Manager.	\$50 per day per report that is late or not submitted.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
2. CEQA Document	CEQA Document submitted to Contract Manager.	\$50 per day per document that is late or not submitted.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	

\*Deductions may be imposed in addition to the Liquidated Damages at the sole discretion of the Contract Manager.

## PERFORMANCE REQUIREMENTS SUMMARY CLOUD SEEDING SERVICES

The items listed under this Performance Requirements Summary (PRS) are not all encompassing, and any conflict or discrepancy between the requirements specified in Exhibits A through J, inclusive, of this Contract (Exhibits A-J) and this PRS, Exhibits A-J shall control. The County reserves the right to modify this PRS at any time consistent with the requirements set forth in Exhibits A-J, to clarify Performance Requirements, or to monitor of any part of this Contract.

Required Service/Tasks	Performance Indicator	Deductions / Consequences for Failure to Meet Performance Indicator*	Compliance	Comments
3. Monthly/Annual Report	Filed within time frame requested.	\$50 per day per report that is late or not submitted.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
4. Weather Radar and Nuclei Generation Timestamp CD	Filed within time frame requested.	\$50 per day per CD that is late or not submitted.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
<b>C. DELIVERABLES</b>				
1. Fabrication of Cloud Seeding Equipment	All Equipment ready for installation on time.	\$250 per day equipment is not ready for installation.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
2. Installation/Storage of Cloud Seeding Equipment	All Equipment installed and running or put away during off season on time.	\$250 per day equipment not installed or put away.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
3. Repair of Equipment	Equipment running within timeframe agreed upon by Contract Manager.	\$50 per day equipment is not repaired.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
<b>D. EMPLOYEES</b>				
1. Employees Well Oriented To Job	Employees must have thorough knowledge of facility and its needs.	\$50 per error resulting from lack of orientation; possible suspension.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
2. Staffing	Staffing levels are equal or exceed contract implementation requirements.	\$50 per occurrence.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	

\*Deductions may be imposed in addition to the Liquidated Damages at the sole discretion of the Contract Manager.

## PERFORMANCE REQUIREMENTS SUMMARY CLOUD SEEDING SERVICES

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Required Service/Tasks	Performance Indicator	Deductions / Consequences for Failure to Meet Performance Indicator*	Compliance	Comments
3. Photo I.D. Badges	Photo I.D. Badges worn by all employees on the job at all times.	\$50 per employee, per occurrence.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
4. Training program	Document training of each employee.	\$250 per untrained employee.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
5. Maintain Knowledge of Safety Requirements	Completion of training of all accepted standards for safe practices related to the work.	\$50 per employee, per occurrence.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
<b>D. SUPERVISOR/MANAGERS</b>				
1. Change in Project Manager	Contractor shall notify the County in writing of any change in name or address of the Project Manager.	\$50 per occurrence.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
2. Respond to complaints, requests, and discrepancies.	Respond within the time frame agreed upon with Contract Manager.	\$50 per complaint not responded to within the time frame agreed upon.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
3. Makes Site Inspections	Facility inspected each shift or as required by Contract.	\$50 per occurrence.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
4. Competent Supervisory Staff	Responsiveness to complaints and requests; maintain good work records, and acceptable level of service.	\$200 per occurrence; possible suspension.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	

\*Deductions may be imposed in addition to the Liquidated Damages at the sole discretion of the Contract Manager.

## PERFORMANCE REQUIREMENTS SUMMARY CLOUD SEEDING SERVICES

The items listed under this Performance Requirements Summary (PRS) are not all encompassing, and any conflict or discrepancy between the requirements specified in Exhibits A through J, inclusive, of this Contract (Exhibits A-J) and this PRS, Exhibits A-J shall control. The County reserves the right to modify this PRS at any time consistent with the requirements set forth in Exhibits A-J, to clarify Performance Requirements, or to monitor of any part of this Contract.

Required Service/Tasks	Performance Indicator	Deductions / Consequences for Failure to Meet Performance Indicator*	Compliance	Comments
5. Provide Adequate Supervision and Training	Contract specifications met.	\$50 per occurrence; possible suspension.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
6. Project Safety Official	Project Safety Official who shall be thoroughly familiar with the Contractor's Injury and Illness Prevention Program and Code of Safe Practices.	\$200 per occurrence.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
7. Supervisors speak, read, write, and understand English	On-site supervisor can communicate in English with County Contract Manager.	\$100 per day for use of non English-speaking supervisor; possible suspension.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
<b>E. CONTRACT ADMINISTRATION</b>				
1. Insurance Certifications	Certifications submitted before implementation of contract and on a timely basis there-after.	\$200 per day; work/contract; possible suspension; possible termination for default of contract.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
2. Provide Performance Bond	Valid bond is furnished and not allowed to lapse.	\$200 per day; possible suspension; possible termination for default of contract.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
3. Record Retention & Inspection/Audit Settlement	Maintain all required documents as specified in contract.	\$200 per occurrence.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	

\*Deductions may be imposed in addition to the Liquidated Damages at the sole discretion of the Contract Manager.

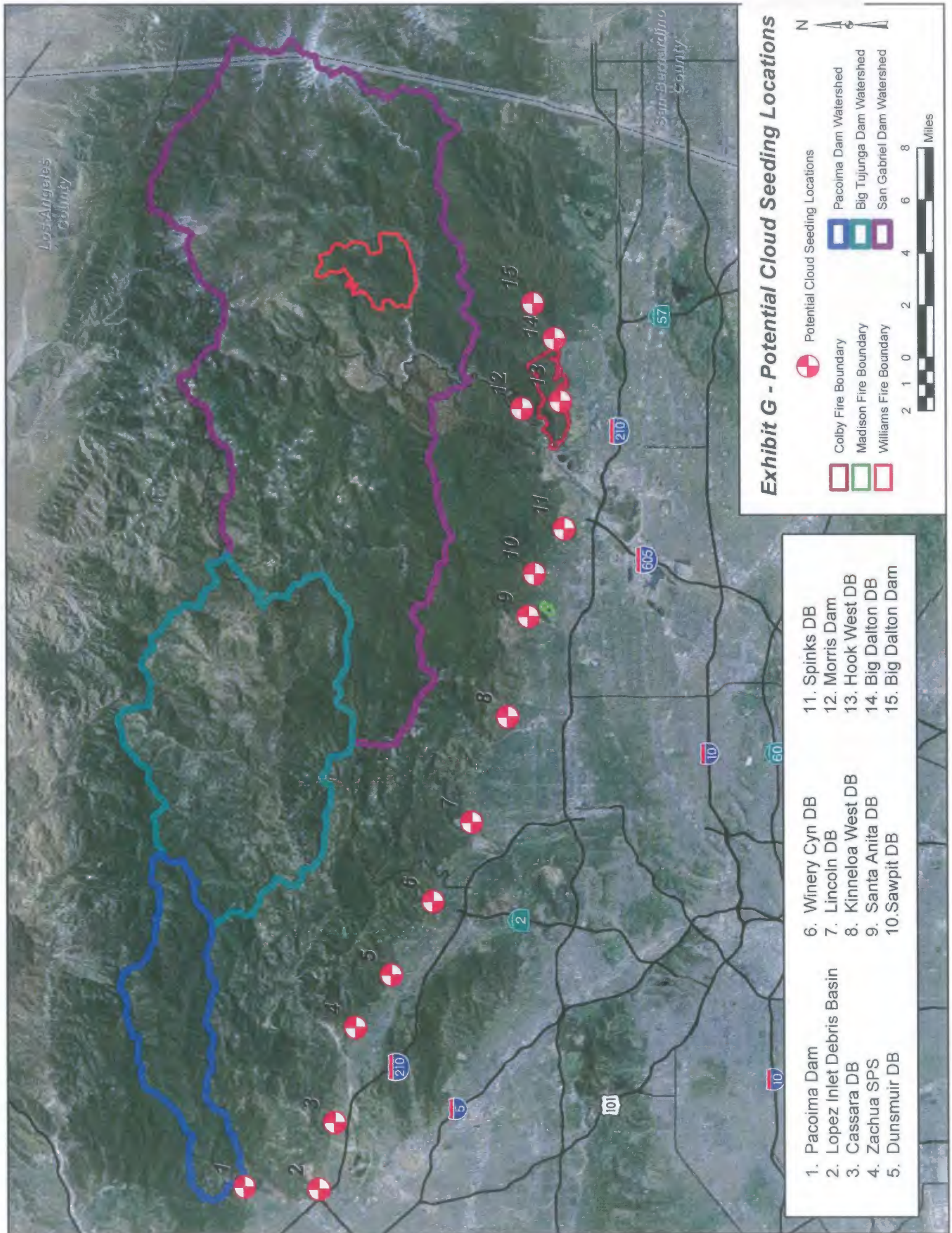


## PERFORMANCE REQUIREMENTS SUMMARY CLOUD SEEDING SERVICES

The items listed under this Performance Requirements Summary (PRS) are not all encompassing, and any conflict or discrepancy between the requirements specified in Exhibits A through J, inclusive, of this Contract (Exhibits A-J) and this PRS, Exhibits A-J shall control. The County reserves the right to modify this PRS at any time consistent with the requirements set forth in Exhibits A-J, to clarify Performance Requirements, or to monitor of any part of this Contract.

Required Service/Tasks	Performance Indicator	Deductions / Consequences for Failure to Meet Performance Indicator*	Compliance	Comments
4. Use of Subcontractor without Approval and/or Authorization.	Obtain County's written approval prior to subcontracting any work.	\$500 per occurrence; possible suspension; possible termination for default of contract.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
5. License and Certification	All license and certifications required to perform the work, if any.	\$200 per day; possible suspension; possible termination for default of contract.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
6. Assignment and Delegation	Contractor shall not assign its rights or delegate its duties under this Contract, or both, whether in whole or in part, without the prior written consent of County.	\$200 per day the County is not informed of this change; possible suspension; possible termination for default of contract.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
7. Safety Requirements	Comply with all applicable State of California Occupational Safety and Health Administration (Cal/OSHA).	\$500 per occurrence; possible suspension.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	

\*Deductions may be imposed in addition to the Liquidated Damages at the sole discretion of the Contract Manager.



***North American Weather Consultants, Inc.***

**SAN GABRIEL MOUNTAINS  
CLOUD SEEDING PROGRAM REPORT**

***Prepared for***

**Los Angeles County, Department of Public Works**

***By***

**Don A. Griffith, Certified Consulting Meteorologist  
North American Weather Consultants, Inc.  
8180 South Highland Dr., Suite B-2  
Sandy, Utah 84093**

**Agreement No. 08-223**

**April 8, 2009**

**SAN GABRIEL MOUNTAINS  
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**April 8, 2009**



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B	Resumes
C	Santa Barbara II 700mb Winds During Convective Bands
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## 1.0 Introduction

North American Weather Consultants, Inc. (NAWC) of Sandy, Utah submitted document No. P08-223 to provide weather modification (cloud seeding) services. This proposal was submitted in response to a Request For Proposals (RFP) issued by the County of Los Angeles, Department of Public Works (LACDPW) dated February 14, 2008. NAWC had conducted similar work for the County dating back to 1961. NAWC was awarded Contract No. PW 13177 on August 7, 2008 and given the notice to proceed on September 8, 2008.

The RFP specified that the Consultant would evaluate past Public Works generator locations and recommend cloud seeding locations for this program. Recommendations may include alternate and/or additional locations. Figure 1.1 provides the fourteen seeding locations used for cloud seeding operations during the 2001-2002 storm season. None of the locations listed in Figure 1.1 were located on Angeles National Forest land. NAWC believes that sites located in foothill locations, as depicted in Figure 1.1, are suitable seeding locations.

NAWC's proposed seeding design is based upon the positive historical results achieved in the conduct of past Los Angeles County cloud seeding programs and NAWC programs conducted for the Santa Barbara County Water Agency. Only ground based seeding equipment will be used as specified in the RFP. This project is unique in that: 1) seeding impacts are not desired in the Los Angeles Basin, 2) lower-level winds during the more productive storm periods blow from the south towards the north and, 3) high volume aviation traffic prevents aerial seeding. Prevailing airflow patterns during storms also prevent the use of ground generators to the northwest of the three target drainage areas.

Similar to the Santa Barbara II research cloud seeding program and subsequent Santa Barbara County cloud seeding operations, Los Angeles County specified four remotely controlled flare sites and six manually operated cloud seeding generators. Use of the remotely operated flare tree is a major equipment modernization offered by NAWC for cloud seeding purposes.

More details on cloud seeding theory and the Santa Barbara I & II research programs, which provided the basis for NAWC's proposed design for this program, were provided in Section 5 of NAWC Proposal No. P08-223. Parts of this section are reproduced in Appendix A.



**Figure 1.1 Ground Generator Sites Used in the Conduct of the 2001-2002 San Gabriel Cloud Seeding Program**

## **2.0 Generators/ Dispensers**

There will be two types of generators/dispensers utilized to perform the cloud seeding operations proposed to begin in the fall of 2009. The program will utilize remotely operated flare trees and manually operated ground based silver iodide generators.

### **2.1 Remotely Controlled Flare Trees**

NAWC, working with an equipment fabricator in Salt Lake City, designed and fabricated a system that could be installed at remote locations and be programmed to fire flares impregnated with silver iodide. These flares are similar to common highway flares used by patrol officers to alert drivers about hazardous conditions on roadways. Six of these units have been used since that time in the conduct of a winter cloud seeding program in Santa Barbara County, refer to Appendix A. These sites are known as Automated High Output Ground Seeding System (AHOGS) sites. Plans call for the installation of four of these units for the 2009-2010 LACDPW Cloud Seeding Program. Details on these systems are provided in section 4.5.1.



## **2.2 Manually Operated Ground Generators**

NAWC has utilized manually operated silver iodide generators on numerous programs throughout the western United States for a number of years. These generators have been designed and fabricated by NAWC. An acetone, silver iodide solution is burned in a propane flame to produce tiny particles of silver iodide. Plans call for the installation of six of these units for the 2009-2010 LACDPW Cloud Seeding Program. Details on these units are provided in section 4.5.2.

## **2.3 Target Areas and Site Locations**

The proposed target areas are composed of the Pacoima, Big Tujunga, and San Gabriel watersheds located in the San Gabriel Mountains north of Los Angeles. The watersheds are shown in Figure 2.1. As in previous years, we will refer to this program as the San Gabriel Program (SGP). Seeding of the Pacoima watershed will not occur during the 2009-2010 storm season due to the Merek Fire impacts to the region during the fall of 2008. Twenty potential generator or dispenser sites were suggested by LACDPW personnel. NAWC reviewed and visited these sites for suitability. The proposed locations are shown in Figure 2.1. All of these sites are located on LACDPW property and all are fenced with controlled access. In these site visits, several alternative sites were identified. Table 2-1 contains information and remarks concerning these alternative sites. As a result of these onsite visits, 15 locations were selected that could potentially serve as seeding sites. The sites are shown in Figure 2.2. The names, locations, and elevations of these sites are provided in Table 2-2. It should be noted that all locations listed are very similar to the locations used for cloud seeding operations in the 2001-2002 storm season.

Part of this selection process relied upon estimates of potential plume spread from these sites as discussed in Section 3. Sites on the west side of the area were favored since some of these sites have the potential to impact two or even all three of the target watersheds. Some of the eastern-most potential sites are expected to only impact the San Gabriel watershed. In some wind flow directions, only partial impacts to the east side of the San Gabriel watershed are expected.

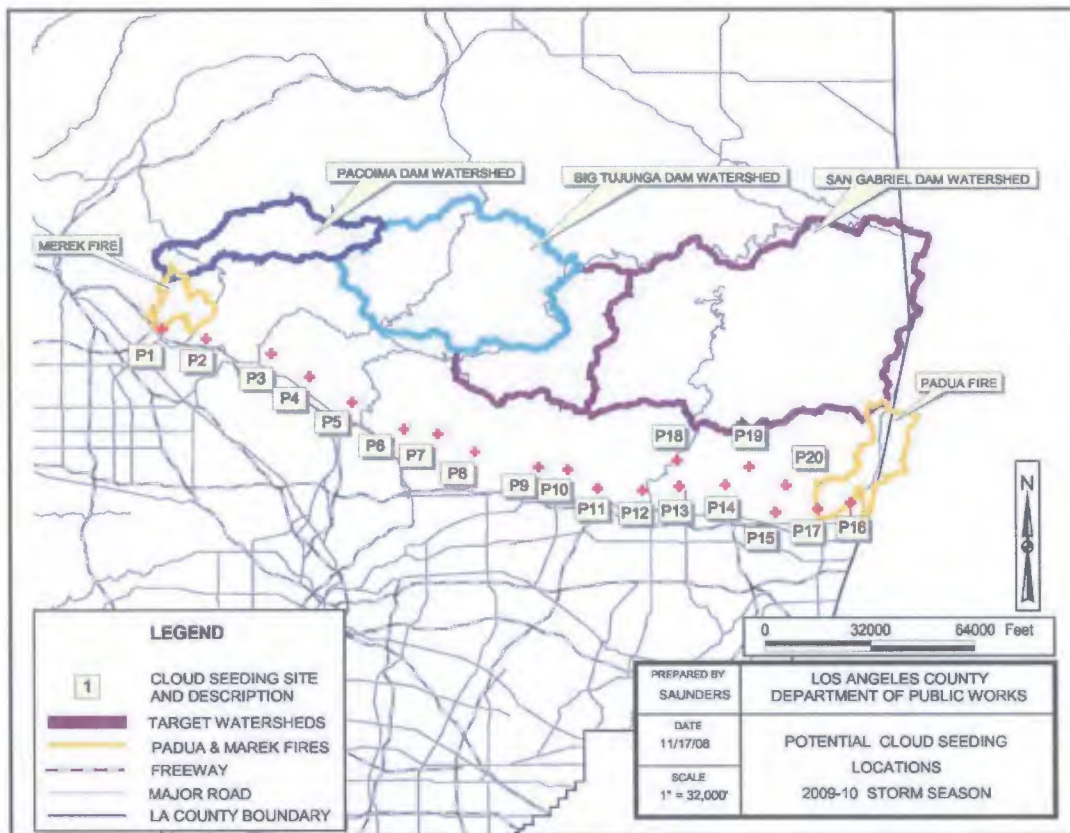


Figure 2.1 Twenty Potential Seeding Sites

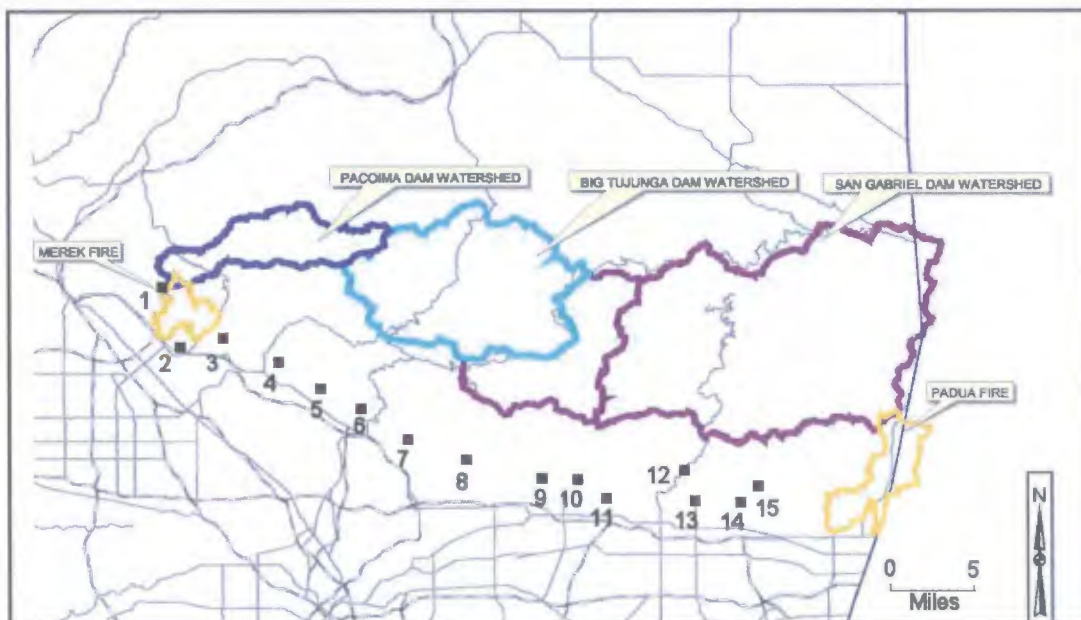


Figure 2.2 Locations of the Fifteen Recommended Seeding Sites

**Table 2-1. Summary of Potential Seeding Sites**

Site Number	Site Name	Rating	Remarks	Yes/No
Alternate 1	Pacomia Dam 118° 24.0' W 34° 19.8' N	Good	Near base of dam. Some LACDPW personnel on site (6:30-4:00). Possible manual or AHOGS site. No other houses nearby, just County buildings. Dirt.	Yes
Alternate 2	Lopez DB	Fair	Out in flat lands, unmanned. Did not go into this facility. Viewed facility from gate.	No
P1	Lopez Inlet Debris Basin 118° 24.08' W 34° 17.31' N	Fair	Congested area. Busy roads nearby. Possible manual generator site. Possible choice for second site that could impact the Pacoima area.	Yes
P2	Cassara DB 118° 21.4' W 34° 16.8' N	Fair To Good	Graffiti, possible vandalism. No nearby buildings. Possible manual site on asphalt pad east side of dam. AHOGS also possible on edge of asphalt pad that is dirt, but somewhat close to bushes. Possible second site to impact Pacoima drainage.	Yes
P3	Zachau DB 118° 17.5' W 34° 16.0' N	Fair	Small area. Possible manual generator site on east side of dam, asphalt or farther east, gravel.	No. Zachua SPS just to the west a better site.
Alternate 3	Zachua SPS 118° 17.6' W 34° 16.1' N	Good	West of Zachua DB, more isolated. Possible manual or AHOGS site. Gravel.	Yes
P4	Dunsmuir DB 118° 15.5' W 34° 14.9' N	Very Good	Isolated location, unmanned, ideal site next to small building. Likely AHOGS or manual site. Gravel. Second possible site, east end of dam, asphalt.	Yes
P5	Winery Cyn DB 118° 13.5' W 34° 12.6' N	Good	Isolated location, 2 locked gates, unmanned. Limited space, possible manual site just behind gate. Gravel.	Yes
P6	Lincoln DB 118° 9.4' W 34° 12.2' N	Good	Large site with many roads. Possible manual or AHOGS site. Gravel.	Yes
P7	Rubio DB 118° 7.4' N 34° 12.0' N	Fair to Good	Possible manual or AHOGS site on east side of dam near spillway but would be visible from houses. Also gravel areas further east closer to road (one of these areas was where there was a manual site during the earlier program).	No, close to P6.
P8	Kinneloa West DB 118° 5.2' W 34° 11.0' N	Good to Very Good	Isolated location. Two possible sites, one on west end of dam (concrete) could be manual site. Second site adjacent to short dirt road along west side of catchment area could be AHOGS site. Gravel.	Yes



**Table 2-1. Summary of Potential Seeding Sites (Continued)**

Site Number	Site Name	Rating	Remarks	Yes/No
P9	Santa Anita DB 118° 1.2' W 34° 10.3' N	Good	Large area, unmanned. Possible manual or AHOGS site east side of drainage.	Yes
P10	Sawpit DB 117° 59.5' W 34° 10.1' N	Good	Suitable area along road below the dam leading to Sediment Placement Site. East of road adjacent to hillside. Possible manual or AHOGS site. Possible manual site west end of dam, somewhat limited space on parking area, asphalt.	Yes
P11	Spinks DB 117° 57.7' W 34° 9.1' N	Good to Very Good	Above Bradbury Dam. Isolated site, round about access into site. Nice asphalt area of reasonable size. Possible manual or AHOGS site.	Yes
P12	SG Canyon 117° 55.0' W 34° 8.9' N	Fair	Out in the flat lands. Unmanned. Large area, mainly gravel.	No
P13	Hook West DB 117° 52.6' W 34° 9.2' N	Good	Actually two dams adjacent to each other. Several good locations for either manual or AHOGS. One site at east dam would be a good manual site (concrete, protected). Possible AHOGS site below west dam, gravel. Access is through a church property.	Yes
P14	Big Dalton DB 117° 50.1' W 34° 9.4' N	Good	Three possible areas. Small area near west end of dam, possible manual site, but very close to road. Large area below the dam, possible manual or AHOGS site. Possible site out on long dam road (asphalt) on top of dam leading to spillway. No nearby houses. All areas unmanned. All sites gravel.	Yes
P15	Puddingstone Diversion Dam 117° 47.0' W 34° 7.9' N	Fair	Dam operator lives across the street. Possibly only fair cell phone coverage. Large gravel area below low dam. Possible manual or AHOGS site. Site possibly too far east.	No, too far east
P16	Thompson Cr. Dam 117° 42.7' W 34° 8.4' N	Poor to Fair	Unmanned. Possible manual or AHOGS site east side of dam near spillway, both asphalt and gravel side by side. Site too far east.	No, too far east
P17	Webb SPS 117° 44.4' W 34° 8.0' N	Poor to Fair	Unmanned. Possible manual or AHOGS site. Gravel. Site too far east.	No, too far east
P18	Morris Dam 117° 52.9' W 34° 10.5' N	Very Good	Great location for seeding material to flow up the San Gabriel canyon, limited space on dam but possibly enough room for an AHOGS site, clearly enough room for a manual site (one was installed at this location for the earlier program), gravel.	Yes

**Table 2-1. Summary of Potential Seeding Sites (Continued)**

Site Number	Site Name	Rating	Remarks	Yes/No
P19	Big Dalton Dam 117° 48.7' W 34° 10.1' N	Good	Site below dam (no room at the dam), possible AHOGS or manual site. Manual generator located here during previous program.	Yes
P20	San Dimas Dam 117° 46.3' W 34° 9.3' N	Fair	Limited space at the dam. Possible manual or AHOGS site. Probably too far east. Asphalt and gravel.	No, too far east and limited space.

**Table 2-2. Summary of Recommended Seeding Sites**

Site Number	Site Name, Location, Elevation	Rating	Remarks	Yes/No
1	Pacomia Dam 118° 24.0' W 34° 19.8' N 1502'	Good	Near base of dam. Some LACDPW personnel on site (6:30-4:00). Possible manual or AHOGS site. No other houses nearby, just County buildings. Dirt.	Yes
2	Lopez Inlet Debris Basin 118° 24.08' W 34° 17.31' N	Fair	Busy roads nearby. Possible manual generator site. Possible choice for second site that could impact the Pacoima area.	Yes
3	Cassara DB 118° 21.4' W 34° 16.8' N 1280'	Fair To Good	Graffiti, possible vandalism. No nearby buildings. Possible manual site on asphalt pad east side of dam. AHOGS also possible on edge of asphalt pad that is dirt, but somewhat close to bushes. Possible second site to impact Pacoima drainage.	Yes
4	Zachua SPS 118° 17.6' W 34° 16.1' N 1845'	Good	West of Zachua DB, more isolated. Possible manual or AHOGS site. Gravel.	Yes
5	Dunsmuir DB 118° 15.5' W 34° 14.9' N 2258'	Very Good	Isolated location, unmanned, ideal site next to small building. Likely AHOGS or manual site. Gravel. Second possible site, east end of dam, asphalt.	Yes
6	Winery Cyn DB 118° 13.5' W 34° 12.6' N 1935'	Good	Isolated location, 2 locked gates. Limited space, possible manual site just behind gate. Gravel.	Yes
7	Lincoln DB 118° 9.4' W 34° 12.2' N 1351'	Good	Large site with many roads. Possible manual or AHOGS site. Gravel.	Yes

**Table 2-2. Summary of Recommended Seeding Sites (Continued)**

Site Number	Site Name, Location, Elevation	Rating	Remarks	Yes/No
8	Kinneloa West DB 118° 5.2' W 34° 11.0' N 1397'	Good to Very Good	Isolated location. Two possible sites, one on west end of dam (concrete) could be manual site. Second site adjacent to short dirt road along west side of catchment area could be AHOGS site. Gravel.	Yes
9	Santa Anita DB 118° 1.2' W 34° 10.3' N	Good	Large area, unmanned. Possible manual or AHOGS site east side of drainage.	Yes
10	Sawpit DB 117° 59.5' W 34° 10.1' N 954'	Good	Suitable area along road below the dam leading to Sediment Placement Site. East of road adjacent to hillside. Possible manual or AHOGS site. Possible manual site west end of dam, somewhat limited space on parking area, asphalt.	Yes
11	Spinks DB 117° 57.7' W 34° 9.1' N 837'	Good to Very Good	Above Bradbury Dam. Isolated site, round about access into site. Nice asphalt area of reasonable size. Possible manual or AHOGS site.	Yes
12	Morris Dam 117° 52.9' W 34° 10.5' N 1180'	Very Good	Great location for seeding material to flow up the San Gabriel canyon, limited space on dam but possibly enough room for an AHOGS site, clearly enough room for a manual site (one was installed at this location for the earlier program), gravel.	Yes
13	Hook West DB 117° 52.6' W 34° 9.2' N 1193'	Good	Actually two dams adjacent to each other. Several good locations for either manual or AHOGS. One site at east dam would be a good manual site (concrete, protected). Possible AHOGS site below west dam, gravel. Access is through a church property.	Yes
14	Big Dalton DB 117° 50.1' W 34° 9.4' N 1155'	Good	Three possible areas. Small area near west end of dam, possible manual site, but very close to road. Large area below the dam, possible manual or AHOGS site. Possible site out on long dam road (asphalt) on top of dam leading to spillway. No nearby houses. All areas unmanned. All sites gravel.	Yes
15	Big Dalton Dam 117° 48.7' W 34° 10.1' N 1585'	Good	Site below dam (no room at the dam), possible AHOGS or manual site. Manual generator located here during previous program.	Yes

## 2.4 Operator/Maintenance and Technical Support Personnel

Operator personnel for the 2009-2010 storm season would include Don Griffith, Mark Solak, and David Yorty who are all full-time NAWC employees/meteorologists. Each of these individuals has extensive experience conducting cloud seeding programs. Mr. Don Griffith will serve as program manager of this program. Mr. Griffith has certifications from the American Meteorological Society (Certified Consulting Meteorologist), and the Weather Modification Association (Certified Weather Modification Manager and Certified Weather Modification Operator). Mr. Solak holds certifications from the Weather Modification Association (Certified Manager and Certified Operator). Mr. Yorty holds the Certified Operator certification from the Weather Modification Association. Resumes of these individuals are provided in Appendix B.

Equipment operation, maintenance and technical support personnel will be identified during the fall of 2009. NAWC will advertise for part-time technicians to be hired and trained to operate, re-supply, and maintain the seeding equipment during the 2009-2010 storm season. NAWC will hire one or two technicians. Those on a short list of potential candidates will be interviewed in person by a NAWC officer in order to select the technician(s). NAWC has successfully used this approach in the conduct of multiple winters of seeding on cloud seeding programs in Utah, Idaho, and Colorado.

All the seeding equipment will be thoroughly tested in Utah prior to transport to Los Angeles. This testing will include tests of the newly fabricated flare trees using the internet communications, scheduling firing of each flare position, and confirmation of voltage reaching each flare position.

The technician(s) will receive on-site training from one or two experienced technicians. This training will occur during the installation phase of the manual and remotely operated flare trees. Additional off-site technical support on the remotely operated flare trees will be available from APCO and Cambell Scientific, the fabricators of the equipment. These companies are providing a number of the components used in the fabrication of the remotely operated units.

NAWC will provide spares of critical components to the technician(s), which will allow rapid field repairs. For example, at least one spare head for the manual generators will be provided to the part-time technicians. This head can be exchanged with a malfunctioning unit in the field in approximately 30 minutes. Generally, repair of malfunctioning equipment will occur within 24 hours. NAWC will provide a spare data logger and modem to the on-site technician for possible field exchanges on the remotely operated flare trees. NAWC has also developed a manual on the operation and maintenance of the manual units. A copy of this manual will be provided to the on-site technician and Public Works for this program. Phone consultation with an experienced technician can be arranged to assist in the diagnosis of equipment problems. Periodic checks can be scheduled of the remotely operated flare trees using the off-site internet communications. Such checks can confirm that the communications with the site are working and also provide the battery voltage confirming that the solar panel/battery system is working correctly.



During the 2009-10 storm season, NAWC operational personnel will be able to turn on or off individual manually operated cloud seeding equipment within 1-hour. If needed, changes in maintenance methodology or personnel will be made with LACDPW written approval. As a general policy, malfunctioning equipment will be returned to operational status within a three-day period.

### **3.0 Target Watersheds, Seeding Coverage, Airflow and Recommended Seeding Sites for the 2009-2010 Storm Season**

#### **3.1 Target Watersheds, Seeding Coverage and Airflow**

As discussed in Section 2, the target watersheds will be the Pacoima, Big Tujunga, and San Gabriel drainages. The Pacoima watershed will not be seeded during the 2009-2010 storm season due to fire damage. The RFP requests an area map indicating the target watersheds covered by each cloud nucleating generator under expected normal conditions of air movement. Upper-air (weather balloon) observations were made during the Santa Barbara II research program, Phases I and II (Thompson, 1975, Griffith, et al, 2005). This research program was conducted in Santa Barbara County during the period of 1967-1974. Weather balloons were launched into "convection bands" as they passed over the observation site. These convection bands were the seeding targets of the research program (refer to Appendix A). It is standard procedure to report weather balloon observations at constant pressure altitudes. One of these altitudes is 700 millibars, which is typically located at approximately 10,000 feet in the atmosphere. There were 181 observations of the wind direction and wind speed at the 700 mb level available from the earlier research program. We calculated an average of these observations, which was  $234^{\circ}$  and 36 knots. Winds in meteorology are reported in the direction from which the wind is blowing so the average winds at 700 mb during the passage of convection bands were blowing from the southwest towards the northeast at an average velocity of 36 knots, which is approximately 41 miles per hour. Appendix C contains this 700 mb wind information.

Even though these data are rather dated and were taken from a different location, we believe they are a reasonable approximation of the average winds that may be expected during the San Gabriel Mountains cloud seeding program. The transport and diffusion of seeding materials from the proposed ground seeding sites will vary from storm to storm and even during a storm. The resultant nucleation of ice crystals, their growth into snowflakes, and the subsequent fall-out either as snow or rain is a very complex issue. Some research groups (e.g., the Desert Research Institute) have attempted to develop models to predict at least part of this sequence of events. However, verification of such predictions is problematic. We suspect that the low-level winds will be blowing from the south or even south-southeast through southwest during winter storms affecting the target areas. As the seeding plume climbs in elevation the winds will likely become more southwesterly. To present an estimate of the possible transport and fall-out of precipitation over the target area, NAWC used the average winds from the Santa Barbara research program to depict the possible effect of each of the 15 proposed generators shown in Table 2-2.

Based on analyses from a research program conducted in Utah (Griffith, et al, 1992), NAWC estimated the plume spread would be approximately  $20^{\circ}$ . Figure 3.1 contains these predicted plumes from each of the generator locations under the expected average conditions.



Figure 3.2 contains the frequency distribution of the 700 mb wind directions in ten degree increments from the Santa Barbara program. This information can be utilized to visualize how Figure 3.1 might appear with different ten-degree wind direction changes versus the likely frequency of occurrence of such wind directions.

Figure 3.2 is of interest for another reason; the potential production of cloud seeding effects within the Los Angeles Basin. Earlier programs conducted for the San Gabriel Mountains were designed not to have an impact within the Basin. The RFP specified this restriction as well and this issue is mentioned in Section 4.1 which discusses program suspension criteria. Referring to Figure 3.2, it is seen that the 700 mb winds were seldom blowing from due west to west-northwest. This implies that little seeding potential will be lost at the proposed sites (Figure 3.1) due to the restriction of not producing seeding effects in the Los Angeles Basin.

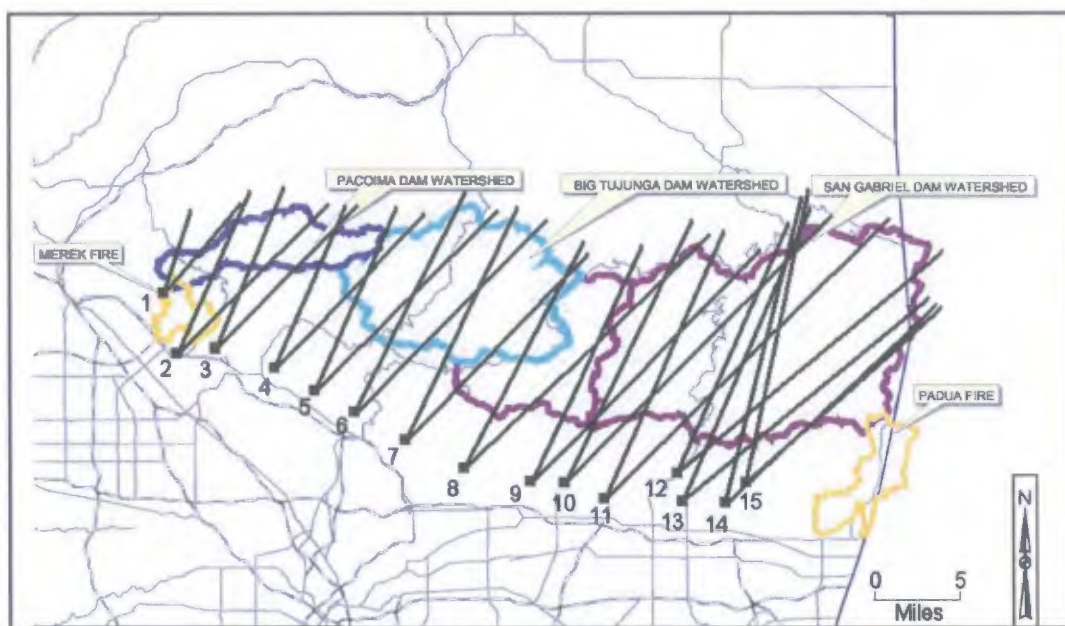
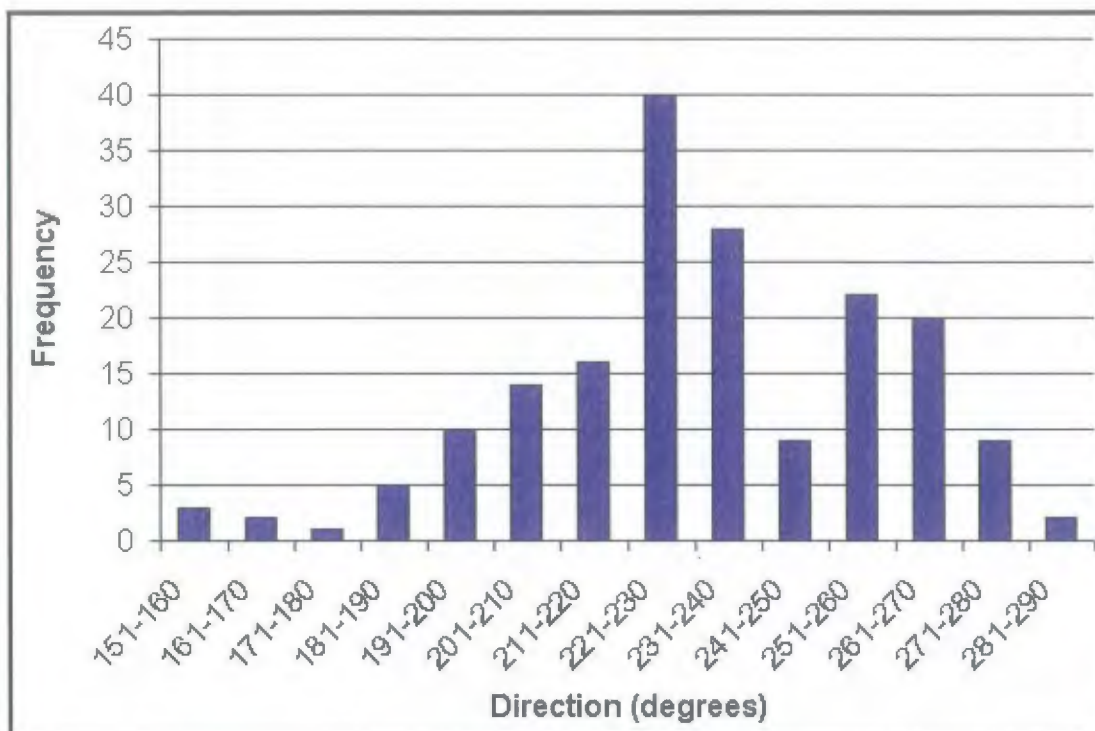


Figure 3.1 Potential Areas of Effect Under "Average" Storm Conditions



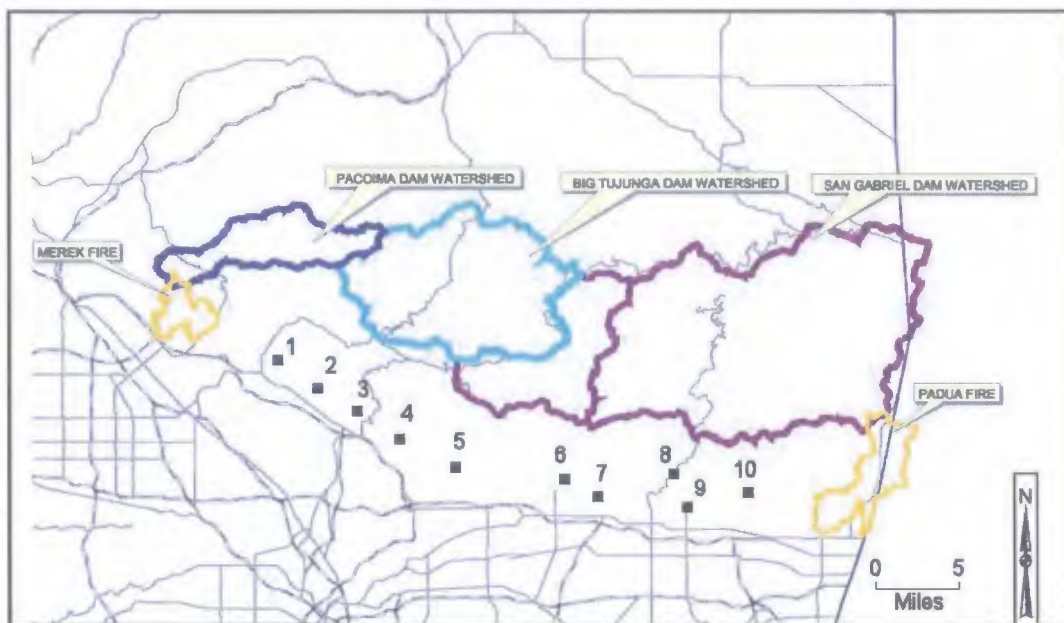
**Figure 3.2 Frequency of Occurrence of 700mb Wind Directions During Convection Band Passages, Santa Barbara II Research Program**

### **3.2 Recommended Seeding Sites for the 2009-2010 Storm Season**

The RFP stipulates that ten seeding sites are to be selected and activated for the 2009-2010 storm season. These ten sites were selected from the 15 recommended sites in Table 2-2 and Figure 3.1. Two of the 15 recommended sites (Pacomia Dam and Lopez Inlet Debris Basin) were eliminated from consideration for this season due to the Merek Fire burned area. Ten sites were identified for potential activation from the remaining 13 sites. Six of these will be manual generator sites and four will be remotely operated flare tree sites as shown in Figure 3.3 and Table 3-1. Five additional locations may be added to the network and the type of generator may change in future storm seasons. For example, a manual generator site used in the 2009-2010 winter program may be converted to a remotely operated dispenser in the 2010-2011 storm season. It should be noted that all ten locations listed in Table 3-1 are very similar to locations used for cloud seeding operations in the 2001-2002 storm season. Only sites from the CEQA Mitigated Negative Declaration will be used.

**Table 3-1. Recommended Seeding Sites for the 2009-2010 Storm Season**

Site Number	Site Name, Location, Elevation	Type of Dispenser
1	Zachua DDS 118° 17.6' W 34° 16.1' N 1845'	manual
2	Dunsmuir DB 118° 15.5' W 34° 14.9' N 2258'	remote
3	Winery Cyn DB 118° 13.5' W 34° 12.6' N 1935'	manual
4	Lincoln DB 118° 9.4' W 34° 12.2' N 1351'	manual
5	Kinneloa West DB 118° 5.2' W 34° 11.0' N 1397'	remote
6	Sawpit DB 117° 59.5' W 34° 10.1' N 954'	remote
7	Spinks DB 117° 57.7' W 34° 9.1' N 837'	manual
8	Morris Dam 117° 52.9' W 34° 10.5' N 1180'	remote
9	Hook West DB 117° 52.6' W 34° 9.2' N 1193'	manual
10	Big Dalton Dam 117° 48.7' W 34° 10.1' N 1585'	manual



**Figure 3.3 Ten Recommended Sites for the 2009-2010 Storm Season**

#### **4.0 Operational Manual and Guidelines**

This section describes equipment, personnel, and procedures that will be used in the conduct of the 2009-2010 winter cloud seeding program. The operational period will be November 1, 2009, through March 31, 2010, with possible extension of the program through April 30, 2010, depending upon available funding. As stated in the RFP, cloud seeding operations shall be carefully coordinated with weather conditions to ensure maximum effect in the target areas while avoiding any impacts in the urban areas. Furthermore, the seeding objective should be to seed as many favorable storms as practical to enhance precipitation within the target areas.

##### **4.1 Activation Criteria and Procedures**

###### **4.1.1 General Activation Criteria**

NAWC's project meteorologist(s) will monitor weather conditions in order to identify storm events that may impact the target area. As storm systems approach the target areas, their seeding potential will be determined. The seeding targets will primarily be convection bands that are typically embedded in the winter storms impacting coastal regions of southern California. NAWC's design for this modernized San Gabriel cloud seeding program was based upon the results obtained from a research program conducted in Santa Barbara County. The four remotely controlled flare trees would be the primary seeding mode during the passage of convection bands through the target areas. Seeding could also be accomplished in the more stratiform clouds between convection bands using the manually operated ground generators. If a storm event is expected to impact the target area, a determination will be made whether it should be seeded. There are two considerations involved: 1) do meteorological conditions indicate that the situation is seedable and 2) suspension criteria are not met or expected to be met with the passage of the



seedable event through the target areas. Three meteorological conditions indicate the event is seedable:

- 1) The radar echo tops within the band are less than  $-5^{\circ}\text{C}$ . This temperature is the threshold of silver iodide activation.
- 2) The steering level wind flow at the 700mb level is such that seeding impacts would be expected in the target area(s),
- 3) No low-level atmospheric inversions exist to prevent the entrainment of the seeding material into the storm clouds.

The manual generators may potentially be operated both between and during convection band passages if the above seeding criteria and those contained in Table 4-1 are met.

#### **4.1.2 Procedures to Determine Storm Seedability**

NAWC will utilize procedures similar to those used in past LACDPW cloud seeding operations to determine storm seedability. Procedures will also be updated based on insights gained via winter cloud seeding research and operations conducted in Santa Barbara County. These procedures involved weather forecasting of the magnitude and wind directions of winter storms that were expected to impact the target area. Typically storms expected to produce  $<0.50$  inches of rain in the target areas will not be seeded.

The "seedability" of the approaching storms will be a function of wind direction, atmospheric stability, and temperatures. Lower level winds need to be blowing from the south through west to avoid creating seeding impacts within the Los Angeles Basin. Fortunately, these wind directions also produce the bulk of the precipitation in the target area. The atmosphere needs to be neutral to unstable to allow the seeding material released from the surface to be transported into the colder portions of the storm clouds in a timely fashion. The temperatures need to be cold enough so that the silver iodide seeding material can quickly reach its activation temperature ( $-5^{\circ}\text{C}$ ). These seedability factors can be examined based upon surface and upper-level observations (i.e. rawinsonde observations) and atmospheric model forecasts.

The seedability issue is vitally important to the success of seeding operations. Data are available from widely spaced routine balloon soundings twice daily, at fixed 12-hour intervals. Balloon release sites at Vandenberg AFB, Edwards AFB and San Diego bracket the project area. These data can be useful, but suffer from coarse time resolution, being twice-daily snapshots. The variability of the winds as a function of height can be considerable and can evolve significantly with time. There are internet sites that provide predicted atmospheric information at six hour intervals, similar to the data available from the standard weather balloon observations. These predictions are derived from the atmospheric circulation models (e.g., NAM, GFS) that are processed by the National Weather Service (NWS). These models provide the backbone of basically all of the weather forecasts that are issued by the NWS.

**Table 4-1. Cloud Seeding Criteria**

1)	CLOUD BASES ARE BELOW THE MOUNTAIN BARRIER CREST.
2)	LOW-LEVEL WIND DIRECTIONS AND SPEEDS THAT WOULD FAVOR THE MOVEMENT OF THE SILVER IODIDE PARTICLES FROM THEIR RELEASE POINTS INTO THE INTENDED TARGET AREA.
3)	NO LOW LEVEL ATMOSPHERIC INVERSIONS OR STABLE LAYERS THAT WOULD RESTRICT THE VERTICAL MOVEMENT OF THE SILVER IODIDE PARTICLES FROM THE SURFACE TO AT LEAST -THE -5°C (23°F) LEVEL OR COLDER. NOTE, THIS CRITERION MAY BE IGNORED IF CONVECTIVE CELLS ARE PRESENT.
4)	TEMPERATURE AT MOUNTAIN BARRIER CREST HEIGHT IS -5°C (23°F) OR COLDER. NOTE, THIS CRITERION MAY BE IGNORED IF CONVECTIVE CELLS ARE PRESENT.
5)	TEMPERATURE AT THE 700-MB LEVEL (APPROXIMATELY 10,000 FEET) IS WARMER THAN -15°C (5°F).
6)	CLOUD TOP TEMPERATURES EXPECTED TO BE > -25°C

As called for in the RFP, NAWC will modernize LACDPW's cloud seeding operations using National Weather Service NEXRAD radars. NEXRAD radars operated by the National Weather Service provide radar reflectivity used to approximate precipitation rate displays and time series data on the vertical wind structure. Information is updated at approximately 5-6 minute intervals. These data are available via specialized subscription services such as WeatherTap, a service that NAWC has used for years. An example plan view reflectivity display is shown in Figure 4.1. The figure shows a convection band that is moving on-shore in southern California. An example radar-derived velocity azimuth display (VAD) plot is shown in Figure 4.2. It provides a time series of average winds at many height levels, based on the motion of hydrometeors sensed by the radars. These data are very helpful in assessing the vertical wind profile in the radar's region of coverage. The NEXRAD radars to be used in this program are

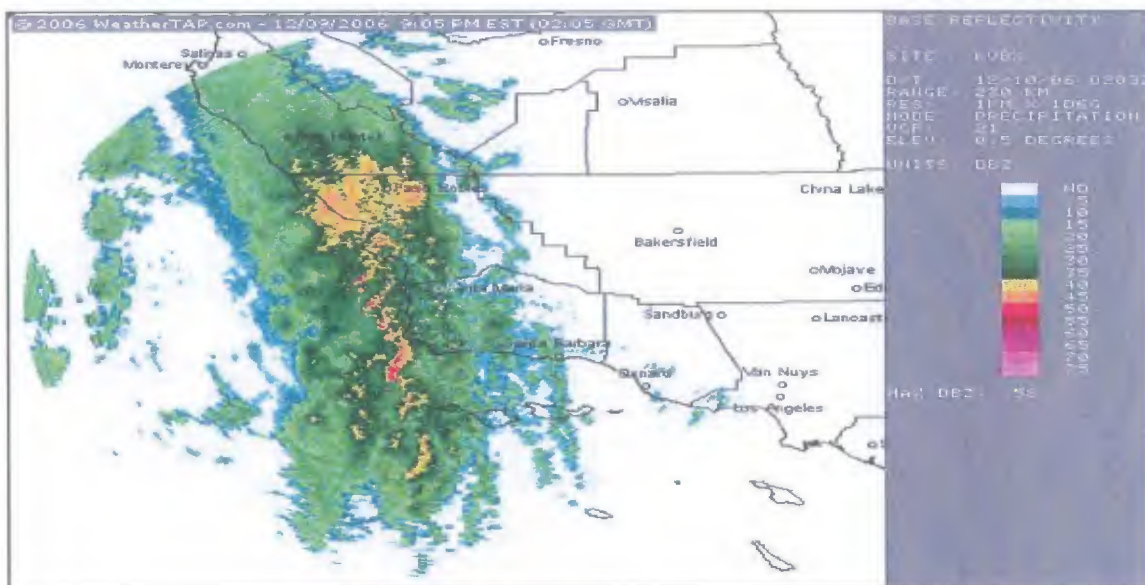
Vandenberg AFB (KVBX), Los Angeles (KVTX), and the Santa Ana Mountains (KSOX). These radar sites provide overlapping coverage of the region as storm systems move through the target areas. The radar data are very useful for monitoring storms, tracking convection bands embedded in overall storm systems, timing the high output seeding releases from NAWC's remotely controlled flare trees, and targeting the seeding effects based upon the wind direction information. NAWC has developed and will use image archiving software to capture and record the reflectivity displays from NEXRAD radars during storm operations. The storm radar sequences will be stored on the acquisition computer's hard drive. The storm sequence images can be produced as needed on CDs or DVDs. As required in the RFP, cloud seeding generator locations and times of activation and deactivation will be documented on CDs or DVDs.

Another very useful tool that will be used for modernization purposes are wind profilers. Profilers are ground-based systems which generate a plot of the winds in a column over the profiler versus time. A profiler network is operated in southern California and the data are available via the internet. Sites relevant to the LACDPW project range from Goleta, Saticoy, and Simi Valley on the west, to Ontario and Moreno Valley on the east. The profiler sites are shown in Figure 4.3. They produce vertical wind profiles from the surface to as high as 4.5 km MSL on an hourly update schedule. Figure 4.4 is an example of a profiler plot. Reference to these data will allow tracking storm-related wind progression as important storm structures traverse the target areas over periods of several hours. The storm wind profiler information will be stored on CDs or DVDs for record keeping purposes.

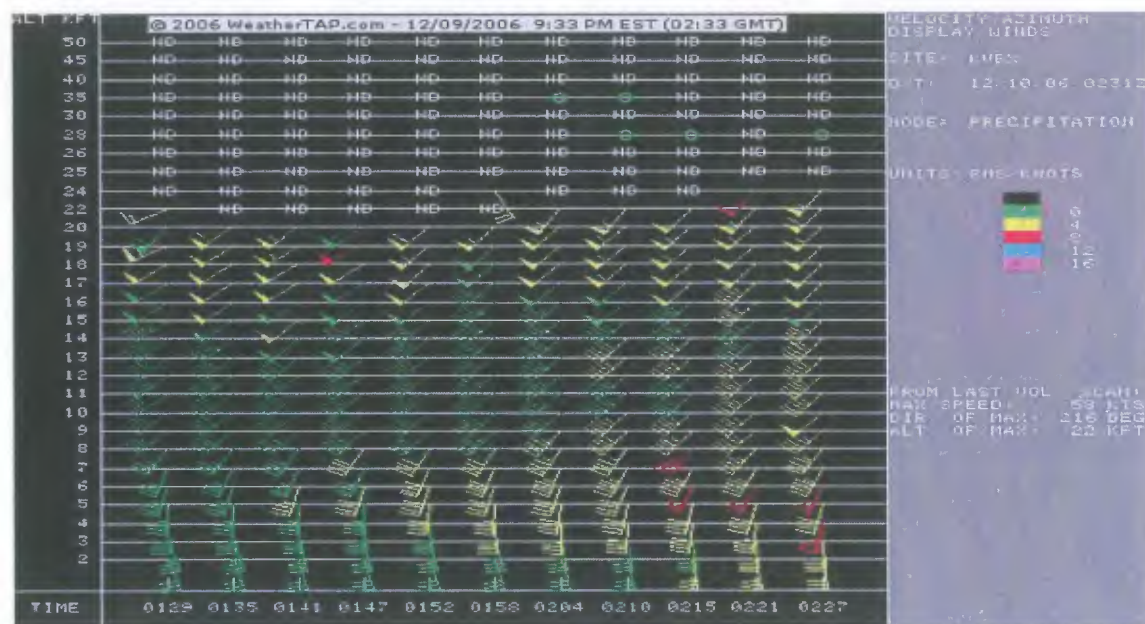
NAWC will also utilize the real-time precipitation data from LACDPW's Automated Local Evaluation in Real Time (ALERT) system to monitor rainfall intensities and the storm system progress through the target areas. This ground truth information will be considered in conjunction with the NEXRAD radar intensity information.

Ground based seeding utilizing the flare trees will be conducted at approximately 15-30 minute intervals as a convection band is passing over any of the four ground sites. All four sites may be used to seed a convection band based upon targeting considerations and the relative strength of the band. Due to their lower cost of operation, manually operated generators will be operated for longer periods when any seeding potential is thought to exist based upon the seeding criteria contained in Table 4-1.





**Figure 4.1** Radar Reflectivity Display Showing a Convection Band Moving into Southern California from the Pacific. Higher reflectivity values indicate a higher precipitation rate.



**Figure 4.2 VAD Wind Profile Time Series Bracketing the Time of the Reflectivity Display (Figure 4.1).** The wind barbs are pointed in the direction that the wind is blowing, and the number of side barbs represent the strength of the wind in knots. Each full length barb is 10 knots, a half barb is 5 knots and a filled triangular barb is 50 knots.



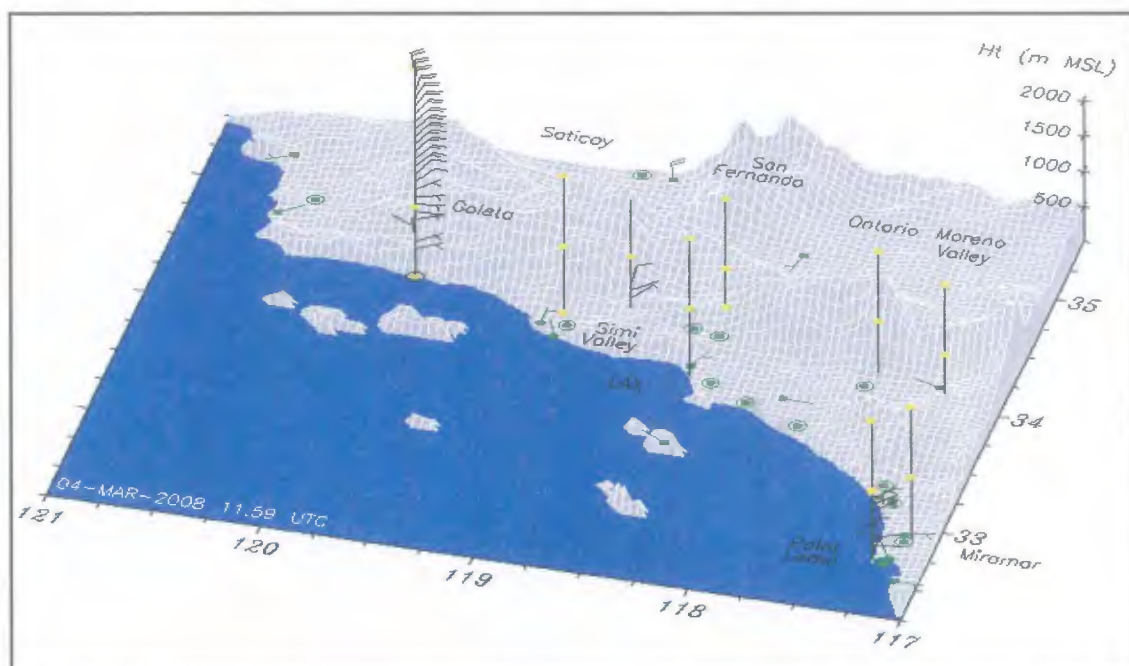


Figure 4.3 Locations of Sites Providing Vertical Wind Profiles in Southern California.

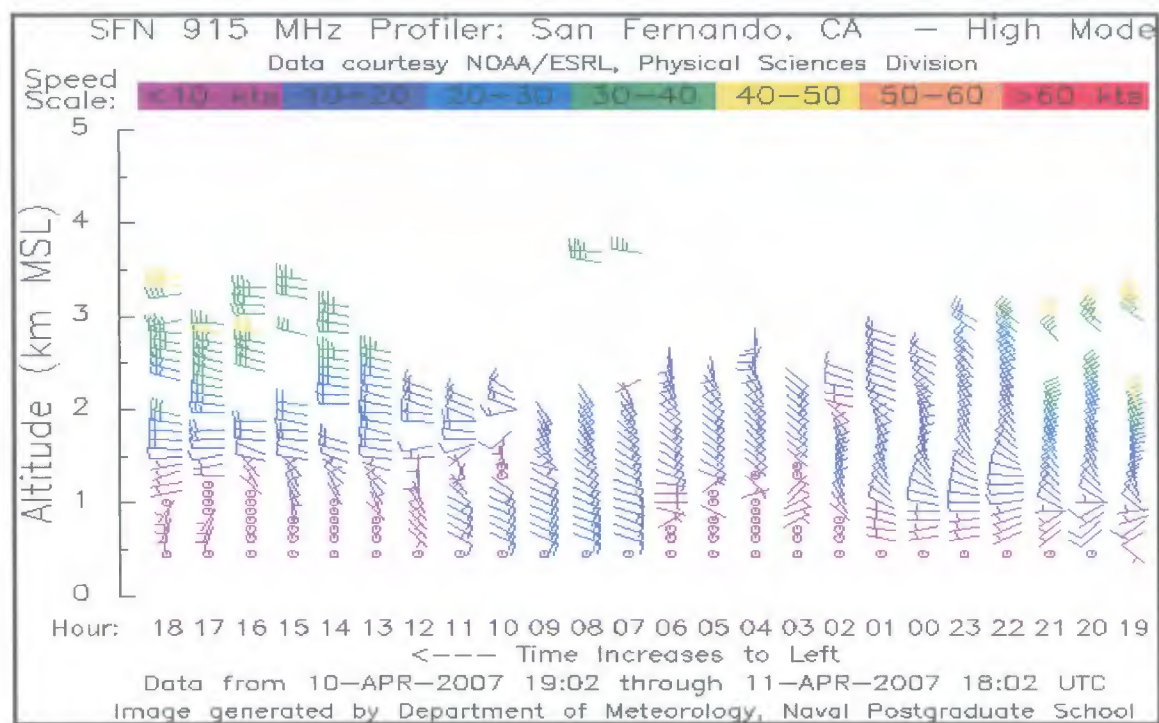


Figure 4.4 Example of Wind Profiler Time Series Data for the San Fernando Site.

### 4.1.3 Suspension Criteria

NAWC is a strong advocate of specifying cloud seeding suspension criteria specifically tailored to the cloud seeding program. Suspensions on the SGP may be necessary as described in Table 4-2.

**Table 4-2. San Gabriel Cloud Seeding Program Suspension Criteria**

Suspension of seeding may be necessary under the following circumstances:

1. **Dam Operations:** Cloud seeding operations for an upcoming storm, and any succeeding storm, may be suspended if reservoir storage is at a level where additional inflow to the reservoir may result in water being released at rates greater than the capacity of the downstream water conservation facilities. This would result in loss of water to the ocean. Additionally, determination that ongoing reservoir reconstruction efforts are being significantly impaired by increased watershed inflow may be a reason for suspension. Cloud seeding may resume when the probability of water loss to the ocean is reduced or risk to dam maintenance and construction activities are mitigated.
2. **Precipitation:** Precipitation rates in excess of 1.0" per hour. Any storm forecast to produce over 5.0 inches of rainfall within a 24-hour period within any of the target areas.
3. **Weather Watch:** Whenever the National Weather Service issues a severe weather or flash flood warning affecting any of the target areas; cloud seeding operations may be suspended.
4. **Fire Damage:** To prevent undue erosion, mudflow hazards, or flooding downstream of an area that has been burned prior to or during a storm season, seeding activities may be suspended for the remainder of the storm season. The suspension will continue until natural re-vegetation occurs to mitigate excessive sediment flows during storms
5. **Earthquake Damage:** Depending on the intensity and distance from the epicenter of an earthquake, prior to or during a storm season, the soil structure in the target areas could be disturbed creating the potential for damaging landslides and mudflows during periods of moderate to heavy rainfall. If these conditions exist in the target areas, cloud seeding in the affected area may be suspended for the remainder of the storm season. Public Works geology, geo-technical, and sedimentation personnel will analyze the impact on sediment transport and decide when cloud seeding may be resumed in that area.
6. Special conditions such as significant construction activities, search and rescue operation, holiday times when public use is higher than normal, and special events such as bicycle races or large public gatherings.
7. Operations that are predicted to have an impact within the Los Angeles Basin.
8. Other special circumstances that the Operations Director or NAWC's Project Meteorologist deem unsafe.

## **4.2 NAWC Staffing**

Operator personnel for the 2009-2010 storm season will include Don Griffith, Mark Solak, and David Yorty who are all full-time NAWC employees/meteorologists. Each of these individuals has extensive experience in the conduct of cloud seeding programs. Mr. Don Griffith will serve as program manager of this program. Mr. Griffith has certifications from the American Meteorological Society (Certified Consulting Meteorologist), and the Weather Modification Association (Certified Weather Modification Manager and Certified Weather Modification Operator). Mr. Solak holds certifications from the Weather Modification Association (Certified Manager and Certified Operator). Mr. Yorty holds the Certified Operator certification from the Weather Modification Association. Resumes of these individuals are provided in Appendix B. See Section 2.4 for maintenance and technical support personnel.

## **4.3 Coordination with LACDPW Staff**

Once NAWC's project meteorologist has developed seeding recommendations, he will coordinate these recommendations with the LACDPW operations director. The operations director will authorize NAWC's project meteorologist to activate the seeding equipment as discussed in the recommendations with any potential modifications requested by the LACDPW operations director. Recommendations will normally include estimates of the duration of the seeding period. Operations will continue as long as seedable conditions exist and no suspension criteria are reached. Operations will cease once NAWC's project meteorologist has determined that the event is no longer seedable.

NAWC's project meteorologist will inform specified LACDPW personnel of all significant events related to the San Gabriel cloud seeding program. One means of dissemination of information during the operational periods will be the monthly program reports.

## **4.4 Remote Monitoring Technique**

Remote weather monitoring techniques were discussed in section 4.1.2

## **4.5 Proposed Equipment**

Cloud seeding will use two types of ground based silver iodide generator systems: 1) remotely operated flare trees, and 2) manually operated silver iodide generators. As requested in the RFP, NAWC recommended 10 ground based seeding sites to be used during the 2009-2010 storm season. Locations of the 10 recommended sites are shown in Figure 4.5. Four sites would use remotely controlled flare trees and six sites would use manually operated generators. Table 3-1 provided the recommended location and generator types for the 2009-2010 storm season. NAWC utilized only manually operated silver iodide generators in the 2001-2002 program. The two types of generators proposed for the 2009-2010 program are described in 4.5.1.



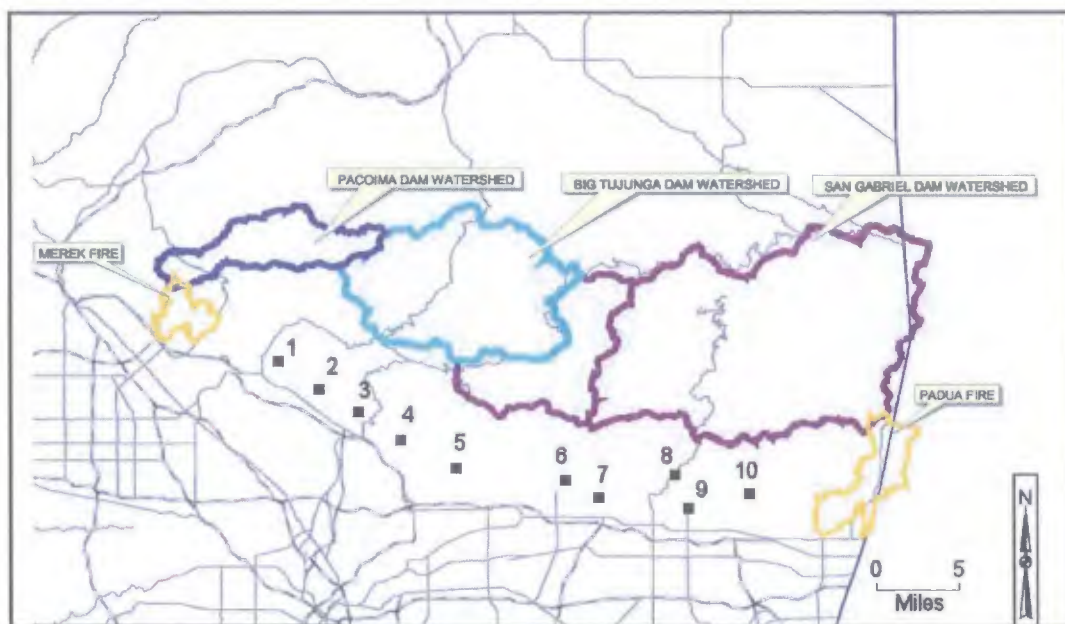


Figure 4.5 Ten Recommended Sites for the 2009-2010 Storm Season

#### 4.5.1 Remotely Operated Flare Trees

This system is based upon one or more “trees” that each hold several flares impregnated with silver iodate on a central control mast. Very large numbers of ice forming nuclei (silver iodide) are produced via combustion of these high output flares. NAWC proposed the use of this type of remotely controlled flare unit for the 2001-2002 winter seeding program in the ongoing Santa Barbara County operational winter cloud seeding program. NAWC was awarded the contract and customized a design for these updated, remotely controlled units, referred to as Automated High Output Ground Seeding Systems (AHOGS). Three units were subsequently fabricated and installed for the 2001-2002 storm season. Three additional units were incrementally added to the network during the period from 2002 through 2007. These sites can be remotely accessed and activated on a 24/7 basis through a cell phone modem that uses a special Campbell Scientific computer program customized for the project and is a password driven system.

The flare seeding system design was modified for the 2005-2006 project through the introduction of a NAWC custom designed spark arrestor. These spark arrestors, which fit over each of the seeding flares, were developed to ensure that no large sparks or burning embers are released from the flare burns. This greatly reduces fire concerns. Since flares are typically burned when rain has recently occurred, or is occurring, fire danger is eliminated. The arrestors were developed in case of an accidental misfire. Figure 4.6 provides a photo of a Santa Barbara site with the spark arrestors installed. Figure 4.7 shows the flares installed without the spark arrestors in place. Figure 4.8 shows close-ups of a flare burning inside a spark arrestor. Appendix D provides a summary of the units being used on the Santa Barbara program.

A similar custom design will be developed for the units to be used on the SGP. One likely change will be to orient the "trees" horizontally. The trees will be mounted approximately four feet off the ground to posts at each end. This design will allow better shielding of these units from view at those sites where this may be a concern. Additional shielding would be provided by erecting a chain link fence around the installation and inserting slats into the chain links. Four systems of this type are scheduled to be fabricated and installed at selected sites for the 2009-2010 San Gabriel winter program.

NAWC initially used this ground-based pyrotechnic seeding approach in the operational Santa Barbara program following the completion of the research program (1982-1985). This flare based seeding mode was discontinued when the manufacture of high output flares was discontinued. Ice Crystal Engineering (ICE) developed and marketed a high output flare beginning in the late 1990's, which again made this a viable seeding approach. ICE manufactures a flare that contains 15 grams of silver iodate seeding material. These flares are similar to common highway distress flares both in appearance and burn characteristics. Once ignited, the flares burn for approximately 4 minutes. The ICE flares have been tested at the Cloud Simulation Laboratory located at Colorado State University (CSU) to quantify their effectiveness in producing ice-forming nuclei. Tests results are summarized in Table 4-3. The flares create high numbers of microscopic sized ice nuclei that are capable of producing ice crystals at temperatures as warm as  $-3.8^{\circ}\text{C}$ . For example, from Table 4-3,  $6.13 \times 10^{13}$  ice crystals could be produced for each gram of silver iodate burned from one of these flares. The goal of producing ice nuclei by any method has always been to develop generation systems that produce nuclei that begin to activate at, or as near as possible, to the freezing level. Numerous research programs have indicated the frequent occurrence of supercooled water droplets in the range of 0 to  $-10^{\circ}\text{C}$ . The flares are also fast acting with 90% of the total ice crystal formation occurring in 5 minutes in the cloud chamber (DeMott, 1999). Both of these characteristics are very attractive for application in the San Gabriel program. The goal of the original Santa Barbara II design was to nucleate as many of the supercooled liquid water droplets in the lower levels of the convection bands as possible. By definition supercooled liquid water droplets can occur at temperatures just slightly less than freezing. The ice nuclei produced by these flares would enter the bases of the convection bands and be carried upward then would nucleate quickly once they are carried through the  $-4^{\circ}\text{C}$  temperature level.



**Figure 4.6 Remotely Operated Flare Site, Santa Barbara County**



**Figure 4.7 Remotely Operated Flare Site Without Spark Arrestors**



**Figure 4.8 Flare Burning with Spark Arrestor**



**Table 4-3. Effectiveness Test Results of the ICE 150 gram Flare at the Colorado -State University Cloud Chamber Facility**

Pyro type	Temp (°C)	LWC (g m <sup>-3</sup> )	Raw Yield (g <sup>-1</sup> AgI)	Corr. Yield (g <sup>-1</sup> AgI)	Raw Yield (g <sup>-1</sup> pyro)	Corr. Yield (g <sup>-1</sup> pyro)	Yield (per pyro)
ICE	-3.8	1.5	3.72x10 <sup>11</sup>	3.87x10 <sup>11</sup>	4.01x10 <sup>10</sup>	4.18x10 <sup>10</sup>	6.27x10 <sup>12</sup>
	-4.0	1.5	9.42x10 <sup>11</sup>	9.63x10 <sup>11</sup>	1.02x10 <sup>11</sup>	1.04x10 <sup>11</sup>	1.56x10 <sup>13</sup>
	-4.2	1.5	1.66x10 <sup>12</sup>	1.70x10 <sup>12</sup>	1.80x10 <sup>11</sup>	1.84x10 <sup>11</sup>	2.76x10 <sup>13</sup>
	-4.3	1.5	2.15x10 <sup>12</sup>	2.21x10 <sup>12</sup>	2.32x10 <sup>11</sup>	2.39x10 <sup>11</sup>	3.53x10 <sup>13</sup>
	-6.1	1.5	6.01x10 <sup>13</sup>	6.13x10 <sup>13</sup>	6.49x10 <sup>12</sup>	6.62x10 <sup>12</sup>	9.93x10 <sup>14</sup>
	-6.3	1.5	5.44x10 <sup>13</sup>	5.56x10 <sup>13</sup>	5.87x10 <sup>12</sup>	6.00x10 <sup>12</sup>	9.00x10 <sup>14</sup>
	-6.4	1.5	6.22x10 <sup>13</sup>	6.34x10 <sup>13</sup>	6.72x10 <sup>12</sup>	6.85x10 <sup>12</sup>	1.03x10 <sup>15</sup>
	-10.5	1.5	2.81x10 <sup>14</sup>	2.85x10 <sup>14</sup>	3.03x10 <sup>13</sup>	3.07x10 <sup>13</sup>	4.61x10 <sup>15</sup>
	-10.5	1.5	2.34x10 <sup>14</sup>	2.37x10 <sup>14</sup>	2.87x10 <sup>13</sup>	2.91x10 <sup>13</sup>	4.37x10 <sup>15</sup>
	-4.2	0.5	1.41x10 <sup>12</sup>	1.45x10 <sup>12</sup>	1.53x10 <sup>11</sup>	1.57x10 <sup>11</sup>	2.36x10 <sup>13</sup>
	-6.0	0.5	7.42x10 <sup>13</sup>	7.73x10 <sup>13</sup>	8.01x10 <sup>12</sup>	8.34x10 <sup>12</sup>	1.25x10 <sup>15</sup>
	-10.5	0.5	2.38x10 <sup>14</sup>	2.41x10 <sup>14</sup>	2.91x10 <sup>13</sup>	2.96x10 <sup>13</sup>	4.44x10 <sup>15</sup>

#### 4.5.2 Manually Operated Silver Iodide Generators

NAWC proposes to install six manually operated silver iodide generators for the 2009-2010 storm season. These manually operated devices would be approximately 12 inches in diameter and three feet tall. Each Cloud Nucleating Generator (CNG) would be connected to a large-capacity propane tank (250-500 gal) supplied by a third-party propane company. Figures 4.9 and 4.10 provide photographs of one of these sites from the 2001-2002 program conducted for the LACDPW. A schematic diagram of one of these generators is provided in Figure 4.11.

Each generator will be attached to four steel rebar rods driven into the ground around each generator, attached to an adjacent structure, or attached to a weighted foundation plate. In all cases, the manual generators will be secured in place by a chain attached to an existing facility or an "I-bolt" concreted in place. This will mitigate tampering by unauthorized personnel. A spare generator will be kept on standby so that replacements can be made within 24 hours in case of theft. NAWC will arrange for temporary employees to be available during storm periods to turn the generators on or off at the six locations.

#### **4.5.3 Chemical Makeup of Flares**

The ICE flares contain 150 grams of binder and seeding material. Each unit emits 15 grams of silver iodide when burned.

#### **4.5.4 Chemical Makeup of Manual Generator Seeding Solution**

The CNGs would operate by burning a solution of approximately 96% acetone ( $\text{CH}_3\text{COCH}_3$ ), 3% silver iodide (AgI), and 1.0% sodium iodide (NaI). The AgI acts as the ice nuclei on which ice crystals form, and the sodium iodide acts as a catalyst to dissolve the AgI in acetone. Each manually operated CNG would hold approximately 8 gal of acetone/AgI solution. The solution would be burned at a rate of 0.12 gal/hr, with the AgI in solution being burned at 24 grams/hr.

#### **4.5.5 Fuel or Propellant to be Used, Flares**

None required.

#### **4.5.6 Fuel or Propellant to be Used, Manual Generators**

Propane gas is used with the manual generators.

#### **4.5.7 Capacity of Remote Flare Dispensers**

The flare trees used in Santa Barbara hold a total of 32 flares. Past experience on this program has shown that the use of more than 300 flares per season was seldom exceeded. The trees that will be designed for the SGP will hold approximately 15-20 flares. 240 flares are estimated to be used for the SGP 2009-2010 storm season. If 8 flares per storm are used at three remotely operated sites, 10 storms could be seeded using the estimated 240 flares. Due to variations in the frequency and duration of seedable conditions, results may vary.

#### **4.5.8 Capacity of Manual Generators**

Each CNG will hold approximately 8 gallons of the acetone/silver iodide seeding solution. The solution would be burned at a rate of 0.12 gal/hr. This consumption rate would allow approximately 30 hours of operation before the tank would need to be refilled. A usage estimate indicates that total of 2880 hours may be used for the manually operated SGP generators during the 2009-2010 storm season. If six generators are operated for 24 hours each, 20 storms could be seeded using the total estimate of 2880 hours. Due to variations in the frequency and duration of seedable conditions, results may vary.

#### **4.5.9 Capacity of Remote Flare Fuel Supply**

No separate fuel supply is required.





**Figure 4.9 Manual Generator**



**Figure 4.10 Manual Generator**

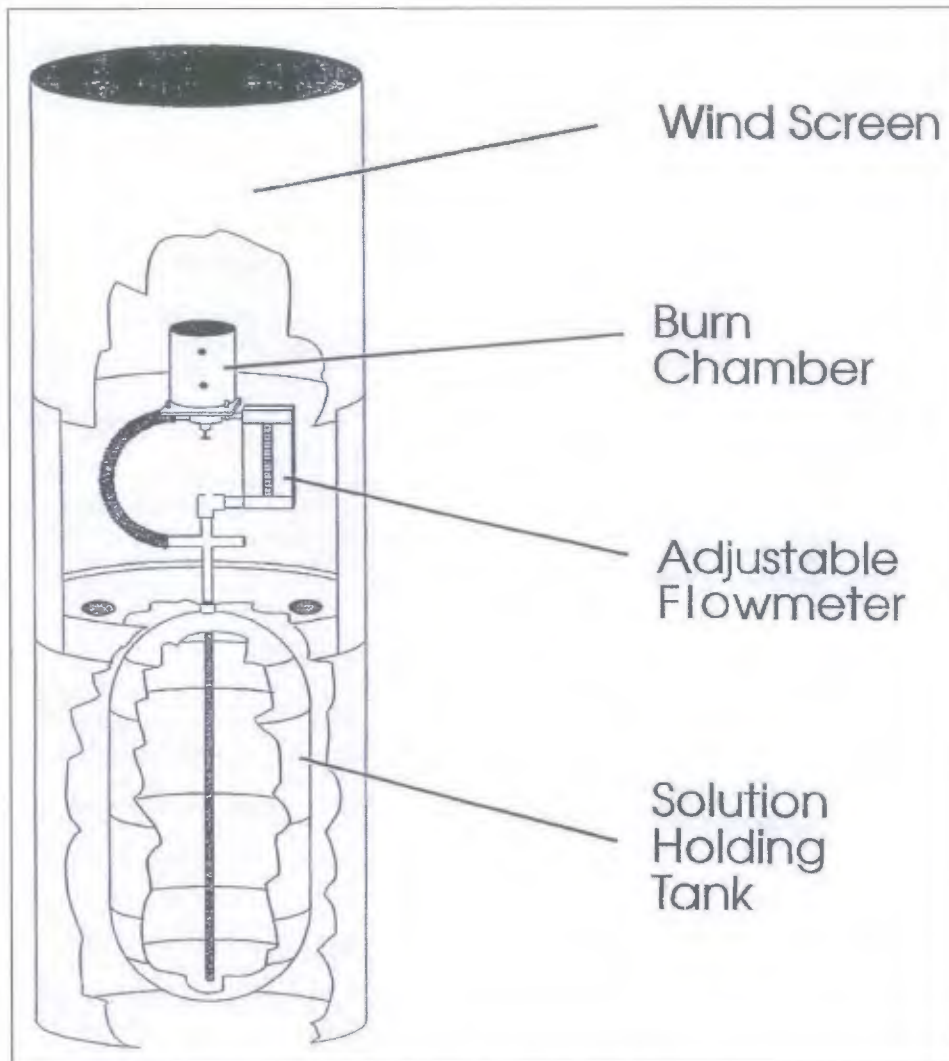


Figure 4.11 Schematic of Manually Operated Generator

#### 4.5.10 Capacity of Manual Generator Fuel Supply

NAWC will probably use propane tanks with a 250-gallon capacity. Tank size availability from a propane supplier will be determined when site installations are made during the fall of 2009. Propane will be burned at a rate of approximately 0.75 gallons per hour. Even though rated at 250 gallons, the tanks would only hold approximately 220 gallons of propane. As a consequence, there should be approximately 290 hours of operational usage before the tanks would need to be recharged. Based upon past experience, these sites may not be operated for 290 hours during the entire storm season and therefore may not need refilling until the following fall.

#### 4.5.11 Vandalism and Fire Protection

Vandalism counter measures will be considered at each of the sites. All sites will be located on LACDPW property. All sites are fenced with access provided to authorized personnel through locked gates. Additional fences (6 to 8 feet in height) will be installed around the four remotely operated flare units. Access to these enclosures will be through a locked gate. Barbed wire will be used if requested by LACDPW.

The manual generators will be removed at the end of each seeding season and re-installed each fall. Some of the components of the remote systems (e.g., solar panels, antennas, batteries) will also be removed each spring and re-installed each fall).

Fire protection measures to be taken at the remote flare sites will include:

- Spark arrestors that are installed around each flare as discussed in section 4.5.1.
- Sites will be installed in areas that are gravel, bare dirt or asphalt.
- Each site will be fenced with plastic slats inserted in the chain link fencing.
- Units will only be operated when rain has recently fallen or is falling in the vicinity as determined from the LACDPW's ALERT rainfall network.

Fire protection measures to be taken at the manual sites will include:

- Each generator will either be secured to four steel rebar rods driven into on the ground around each generator, secured to some structure, or secured to a weighted foundation base plate. Manual generators will be chained to an appurtenance of an existing facility or an "I-bolt" concreted in place. Sites will be installed in areas that are gravel, bare dirt or asphalt.
- Units will only be operated when rain has recently fallen or is falling in the vicinity as determined from the LACDPW's ALERT rainfall network.

#### 4.5.12 Communications and Cloud Seeding Control Center Issues

A project personnel contact list that includes phone numbers and e-mail addresses will be developed each fall prior to the beginning of the operational season. Near real-time communications will be necessary during the winter operational periods when storms are approaching, passing over, and exiting the target areas. Such communications will be accomplished via telephone calls or e-mail. Written monthly reports by NAWC, will be provided to the LACDPW within one week after the completion of each operational month. A draft final report, written by NAWC, will be provided to the LACDPW within 90 days of the completion of seeding activities. This report will detail cloud seeding activities during the storm season and quantify the precipitation generated by the program. Analysis of rain increases will utilize such methodologies as regression analysis. NAWC will finalize the report within 14 days of the receipt of comments on the draft report by LACDPW personnel. Off-season communications will be accomplished via e-mail or telephone.

Control of cloud seeding activities from NAWC's perspective will primarily be accomplished from NAWC's corporate headquarters located in Sandy, Utah. Each of NAWC's meteorologists will also have the necessary project information, access to the internet, the software program needed to operate the remote flare sites, and telephone access in their homes. This will allow operations to be conducted on a 24/7 basis. NAWC's project manager will be responsible for designating the project meteorologist periods of responsibility for the oversight and operations of this program.

#### **4.5.13 Storage and/or Removal of Equipment During the Off Season**

The solar panel, battery and some of the electronics equipment associated with the four remote flare sites will be removed during the off season (May through September). The trees and central communication mast will remain on site.

The six manual generators will be removed during the off-season. The propane tanks will remain on site. This equipment will be stored in a self-storage facility near the project area.

#### **References**

Thompson, J.R., K.J. Brown and R.D. Elliott, 1975: Santa Barbara Convective Band Seeding Test Program. Final Report published by the Naval Weapons Center, China Lake, California.

Griffith, D.A., M.E. Solak, R.B. Almy and D. Gibbs, 2005: The Santa Barbara Cloud Seeding Project in Coastal Southern California, Summary of Results and Their Implications. WMA Journal of Weather Modification, pp. 21-27.

**APPENDIX A**

**SUMMARY OF THE DESIGN AND RESULTS OF THE  
SANTA BARBARA II RESEARCH PROGRAM**





### **Santa Barbara II Research Program**

The Santa Barbara II research program (1967-1973) conducted in Santa Barbara County consisted of two primary phases. Phase I consisted of the release of silver iodide from a ground location near 2,000 feet MSL located in the Santa Ynez Mountains north of Santa Barbara. These silver iodide releases were made as "convective bands" passed overhead. The releases were conducted on a random seed or no-seed decision basis in order to obtain baseline non-seeded (natural) information for comparison. A large network of recording precipitation gauges was installed for the research program (Figure 5.1). The amount of precipitation that fell from each seeded or non-seeded convective band was determined at each precipitation gauge location. Average convective band precipitation for seeded and non-seeded events was calculated for each rain gauge location. Figure 5.2 shows the results of seeding from the ground as contours of the ratios of average seeded band precipitation versus the non-seeded band precipitation.

Ratios greater than 1.0 are common in Figure 5.2. A ratio of 1.50 would indicate a 50 percent increase in precipitation from seeded convection bands. The high ratios in Southwestern Kern County are not significant in terms of amounts of additional rainfall since the convective bands (both seeded and non-seeded) rapidly lose intensity as they enter the San Joaquin Valley. In other words, a high percentage applied to a low base amount does not yield much additional precipitation. These apparent effects may be due to delayed ice nucleation which would be expected with the type of seeding flares used in this experiment, that produced nuclei operating by contact nucleation which is a relatively slow process.

The low amounts of natural precipitation in southwest Kern County results from evaporation in "downslope" flow in the winter storms that affect this area. Such predominant "downslope flow" areas are frequently known as rain-shadow areas in the lee of mountain ranges. Figure 5.3 dramatically depicts this phenomenon from the coastal mountains in Central and Southern California, which are wet, to the San Joaquin and Imperial Valleys, which are dry. The 1.5 ratios along the backbone of the Santa Ynez Mountains are, however, significant in terms of rainfall amounts since this area receives higher natural precipitation during winter

storms due to "upslope" flow. This upslope flow is also known as an orographic effect and accounts for many mountainous areas in the west receiving more precipitation than adjoining valleys (especially downwind valleys). It was concluded that convection band precipitation was increased over a large area using this ground seeding approach.

In a similar experiment, phase II employed an aircraft to release silver iodide (generated by silver iodide - acetone wing tip generators) into the convective bands as they approached the Santa Barbara County coastline west of Vandenberg Air Force Base. The convective bands to be seeded were also randomly selected. Figure 5.4 provides the results. Again, a larger area of higher precipitation is indicated in seeded convective bands compared to non-seeded convective bands. Notice the westward shift of the effect in this experiment versus the ground-based experiment. This feature is physically plausible since the aircraft seeding was normally conducted off the coastline in the vicinity of Vandenberg AFB (i.e., west of the ground-based release point).

A study of the contribution of "convective band" precipitation to the total winter precipitation in the Santa Barbara County and surrounding areas was conducted (in the analysis of the Santa Barbara II research program). This study indicated that convective bands contributed approximately one-half of the total winter precipitation in this area (Figure 5.5). If it is assumed that all convective bands could be seeded in a given storm season and that a 50 percent increase was produced, the result would be a 25 percent increase in storm season precipitation if we assume the convective bands would have contributed one half of the storm season's rainfall. The two reports mentioned earlier (Thompson et al., 1988 and Solak et al., 1996) provided a more precise quantification of the optimal seeding increases that might be expected at Juncal and Gibraltar Dams (i.e., 18-22%) from seeding convective bands.



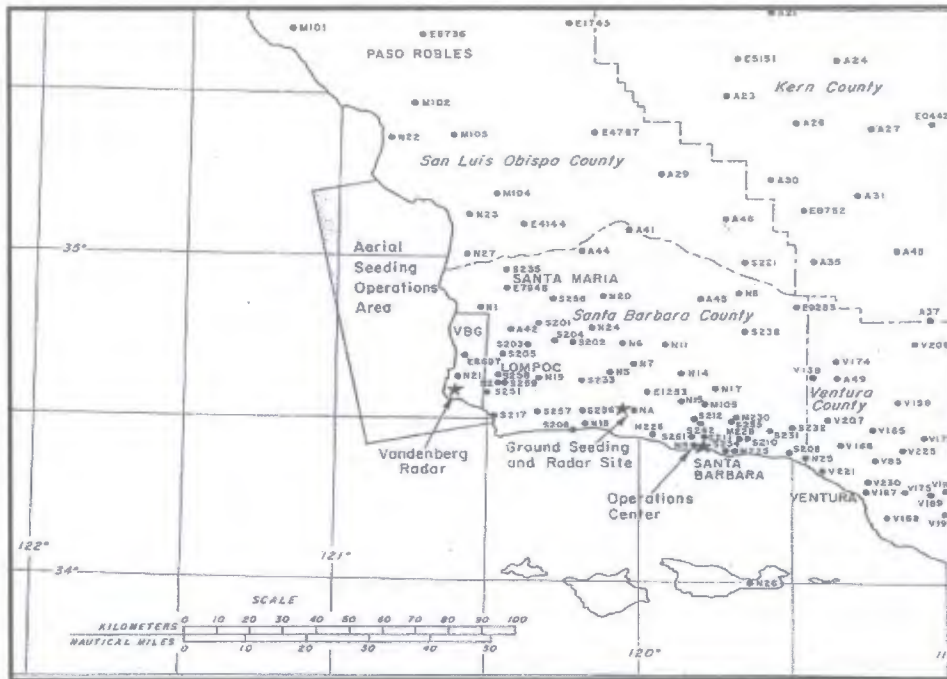


Figure 5.1 Santa Barbara II project map showing rain gage locations, radar, and seeding sites.

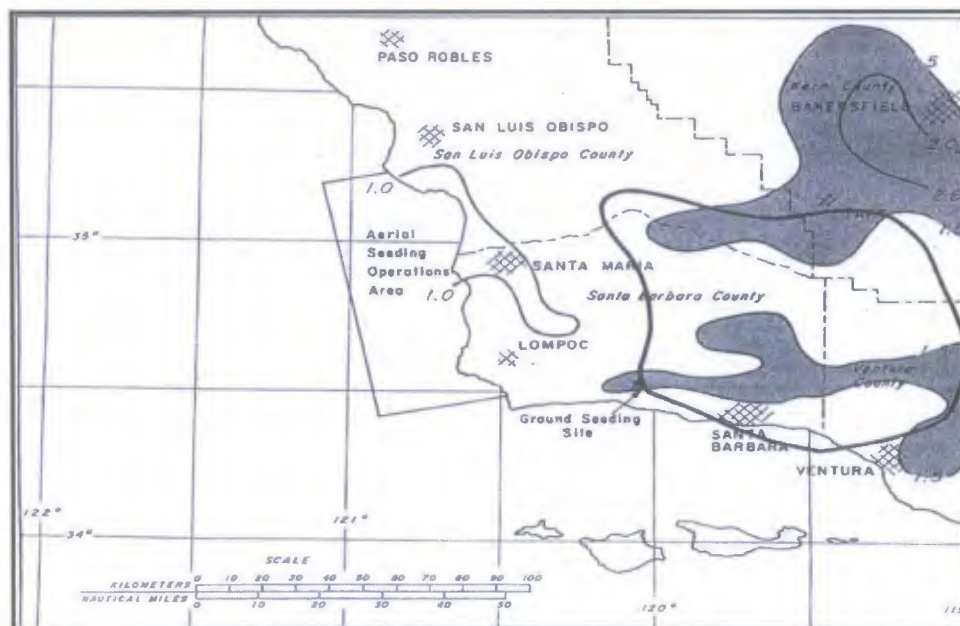
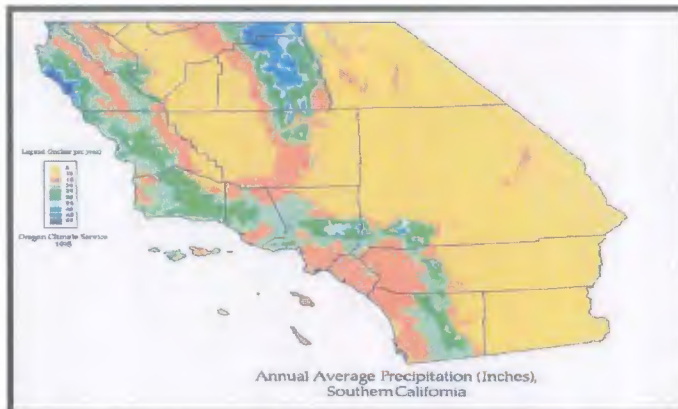
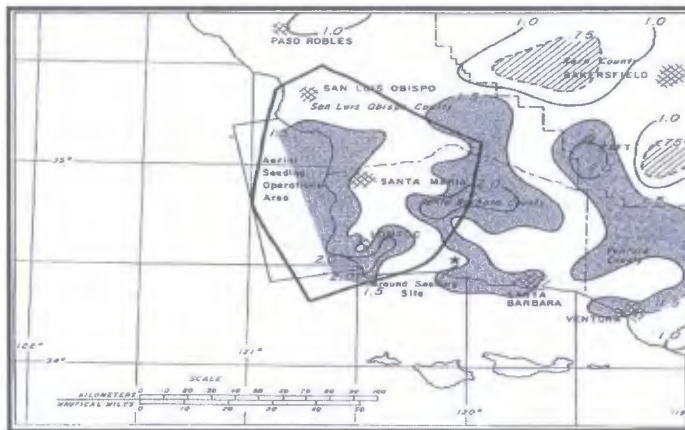


Figure 5.2 Seeded/not-seeded ratios of band precipitation for Phase I ground operations, 1967-71 seasons; 56 seeded and 51 not-seeded bands.



**Figure 5.3** Annual Average Precipitation (inches), Southern California - Period: 1961 1990. (Courtesy of the Oregon Climate Service)



**Figure 5.4** Seeded/not-seeded ratios of band precipitation for Phase II aerial operations, 1970-74 seasons; 18 seeded and 27 not-seeded bands.



**Figure 5.5** Approximate percentage of winter precipitation occurring in convection bands 1970-74 seasons

For illustration purposes, Figure 5.6 provides a sequence of eight radar images of a convection band as it moved into Santa Barbara County. This band impacted the County on February 2, 2004. The radar images are from the Vandenberg AFB NEXRAD radar site. Image times are spaced approximately thirty minutes apart. The times on these images are in UTC Time (subtract 8 hours to determine PST). The different colors in these figures represent different radar reflectivity (dBz) levels, which correspond to different rainfall rates. The lighter colors near the center of the band indicate the highest rainfall rates. Table 5-1 shows hourly rainfall values at Buellton during this event, its location denoted by the black square in each panel of Figure 5.6.

Research conducted in Texas (Rosenfeld and Woodley, 1993; Rosenfeld and Woodley, 1997) and in Thailand (Woodley and Rosenfeld, 1999) has also indicated additional rainfall being produced from silver iodide seeding of convective cloud elements. These increases appear to occur due to increased duration of the seeded entities rather than increases in precipitation intensity. These indications are in agreement with the results observed in the Santa Barbara II research program.

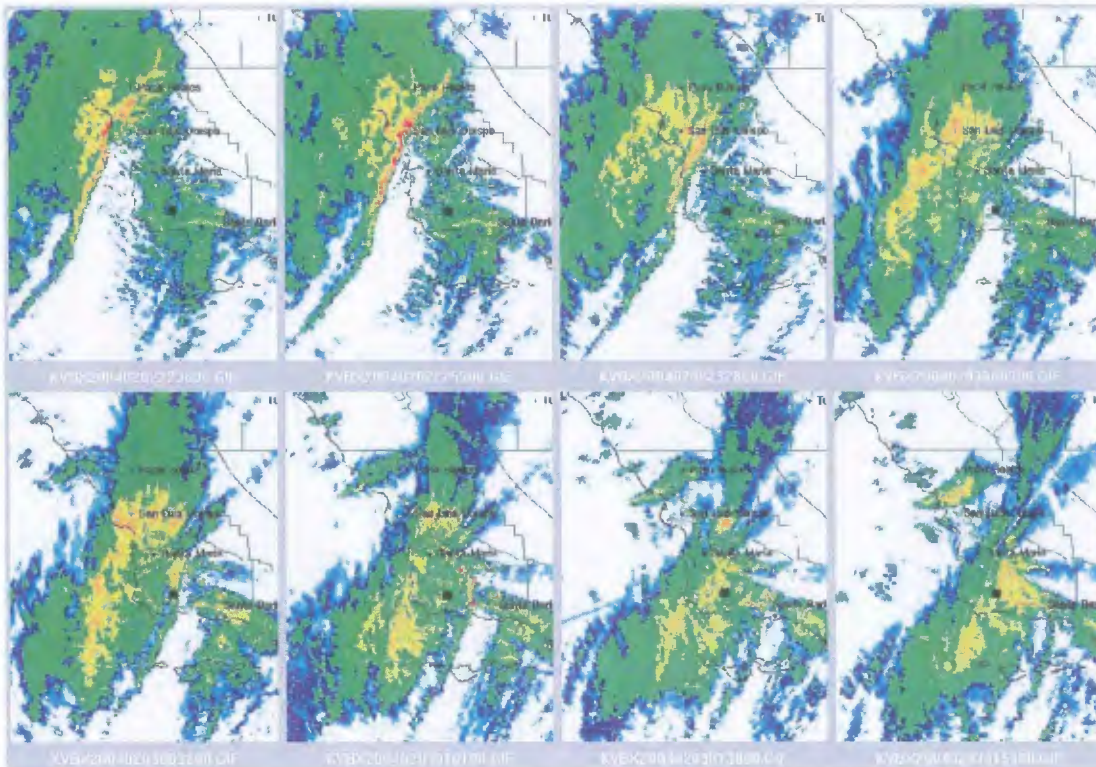
**Table 5-1. Hourly rainfall amounts in Buellton, location shown by black square, during storm event in Figure 5.6 (times are PST)**

Hour Ending (PST)	1300	1400	1500	1600	1700	1800	1900	2000
Precipitation (in)	0.00	0.02	0.15	0.16	0.11	0.14	0.07	0.00

In summary, earlier research conducted in Santa Barbara County indicated that “convection bands” are a common feature of winter storms that impact Santa Barbara County and that those bands contribute a significant proportion (~50%) of the area’s winter precipitation. In addition, research has indicated that these bands contain supercooled liquid water droplets; the target of most modern day cloud seeding activities (Elliott, 1962). Seeding these bands with silver iodide either from the ground or air increases the amount of precipitation received at the ground. These bands are typically oriented in some north to south fashion (e.g. northeast to southwest, northwest to southeast, etc.) as they move from west to east. It is common to have at



least one convection band per winter storm with as many as three or four per storm being fairly common. One band is usually associated with a cold front as it passes through the county. Frequently these frontal bands are the strongest, longest lasting bands during the passage of a storm. Other bands may occur in either pre-frontal or post-frontal situations. The duration of these bands over a fixed location on the ground can vary from less than one hour to several hours duration.



**Figure 5.6** Convective band(s) passing over Santa Barbara County on February 2, 2004  
(Image times are 1436, 1459, 1528, 1609, 1632, 1701, 1730, and 1753 PST).

**APPENDIX B**

**RESUMES**



**DON A. GRIFFITH, CCM****EDUCATION**

B.S., Meteorology, University of Utah, Salt Lake City, Utah, 1967  
Mathematics, Westmont College, Santa Barbara, California, 1967  
B.S., Industrial Construction and Management, Colorado State University, 1963

**TECHNICAL SPECIALTIES**

Mr. Griffith has 40 years of experience in meteorology. Some of Mr. Griffith's technical specialties include:

- Research in Weather Modification
- Design, Operation, and Evaluation of Operational Weather Modification Programs
- Synoptic Weather Forecasting
- Climatological Studies
- Design, Operation, and Evaluation of Atmospheric Tracer Programs
- Applied Meteorological Applications
- Probable Maximum Precipitation Site-Specific Studies
- Forensic Meteorology

**REPRESENTATIVE EXPERIENCE**

Mr. Griffith is currently serving as President of North American Weather Consultants (NAWC), located in Salt Lake City, Utah. NAWC provides meteorological consulting services in air quality, applied meteorology, climatological studies, forensic meteorology, weather forecasting, probable maximum precipitation studies, and weather modification. He is responsible for the overall management and supervision of NAWC and the technical direction and supervision of NAWC's weather modification activities. Mr. Griffith has directed these weather modification activities since 1977. Activities encompass participation in field research programs in weather modification and the design, conduct, and evaluation of operational cloud seeding programs. Programs are conducted in the western United States and a number of foreign countries.

Mr. Griffith has authored or co-authored 29 journal articles and over 140 technical reports. He has presented 51 technical presentations at a variety of professional conferences.

**PROFESSIONAL AFFILIATIONS**

American Meteorological Society, Professional Member  
Past Member, Committee on Planned and Inadvertent Weather Modification  
Certified Consulting Meteorologist, Applied Meteorology  
American Society of Civil Engineers, Affiliate Member  
Vice Chairman, Standards Committee on Atmospheric Water Management  
Past Chairman, Weather Modification Committee  
Past Chairman, Weather and Climate Change Committee  
Past Member, Weather and Climate Change Committee  
Past Member, Research and Education Committee

Weather Modification Association, Certified Manager and Operator  
Past President, 1976-77  
Member, Legislative Affairs Committee  
Past Member, Standard and Ethics Committee  
Past Member, Publications Committee  
Past Chairman, Certification Committee  
Chairman, Awards Committee  
President, 2007-08

## **WORK HISTORY**

President  
North American Weather Consultants  
Utah  
1999 - Present

Senior Vice President/General Manager  
TRC North American Weather Consultants  
Utah  
1994 - 1999

Senior Vice President/Research Meteorologist  
North American Weather Consultants/TRC Environmental Corporation  
Utah 1992 - 1994

Senior Vice President/Research Meteorologist  
North American Weather Consultants  
Utah and California  
1973 - 1992

Meteorologist/Assistant Director, Atmospheric Water Resources Research  
Fresno State College Foundation, California  
1968 - 1973

Meteorologist  
Booz-Allen Applied Research, Inc., California  
1967 - 1968

Weather Officer  
United States Air Force, California and Vietnam  
1964 - 1967

## **AWARDS**

Air Force Commendation Medal, 1967  
Environmental & Water Resources Institute, Standards Development C/CE-4 Award  
Listed in Strathmore's Who's Who, 2002  
Thunderbird Award, Weather Modification Association, 1993



**MARK E. SOLAK****EDUCATION**

B.S., Geography, Eastern Michigan University, Ypsilanti, 1971

**TECHNICAL SPECIALTIES**

Mr. Solak has nearly 35 years experience encompassing:

**Design, Management, Conduct and Evaluation of Weather Modification Operations and Meteorological Research Field Programs**

- Radar Meteorology
- Research Aviation Operations and Data Analysis
- Design, Management and Conduct of Multi-Aircraft Air Quality Field Studies
- Probable Maximum Precipitation (PMP) Studies
- Technical Writing/Editing
- Project Management (all aspects)
- Marketing of Technical Services
- Weather Forecasting

**REPRESENTATIVE EXPERIENCE**

Mr. Solak, Vice President of North American Weather Consultants, and Project Scientist/Senior Project Manager since 1989, has extensive experience in conducting and managing weather modification operations and research programs, domestic and international, plus management of airborne ambient air quality field programs. He has been involved in site-specific Probable Maximum Precipitation (PMP) studies for several western states watersheds. Currently based in Salt Lake City, Utah, he managed North American Weather Consultants' branch office in California from 1989-1993.

**Weather Modification**

Mr. Solak has nearly 35 years of experience in weather modification operations and research. He spent several years at the National Center for Atmospheric Research and has been involved in numerous operational and research field programs in the U.S. and overseas. Holding Weather Modification Association certifications as a program Operator and Manager, he is well qualified to design, manage, conduct, evaluate and provide consulting services on a wide variety of weather modification applications.

*Thunderstorm Research, Field Operations and Data Management, National Center for Atmospheric Research (NCAR), Boulder, Colorado.* For seven years (1972-1979), initially as an Assistant Data Manager and then as a Support Scientist at NCAR, was deeply involved with the radar and aviation aspects of NCAR's large field research programs, especially the National

Hail Research Experiment (NHRE). Directed cloud seeding and research aircraft flight operations focused on high plains thunderstorms and analyzed weather radar and aircraft data as part of an evaluation of randomized cloud seeding trials. Following completion of NHRE, continued on the staff of the Convective Storms Division.

***Winter Storm Field Measurements and Data Analysis, U.S. Bureau of Reclamation, Northern California.*** Was field project supervisor from 1979 through 1984 on a contract with the U.S. Department of the Interior for meteorological and precipitation data collection and analysis. The work was part of a weather modification research program conducted in the central Sierra Nevada Range of California. Large networks of instrument sites were established and operated, followed by analysis and publication of the data to characterize seeded and natural storms.

***Hail Suppression Operations and Research, Greek Government Agency.*** Managed/conducted a large scale multi-aircraft hail suppression project for the Greek government in 1985. Three separate regions were involved in the cloud seeding operations; one included a randomized statistical experiment to evaluate the effects of the cloud seeding efforts. Data from a network of hailpads were analyzed to estimate cloud seeding effectiveness in reducing damaging hail.

***Winter Storm Research, State/Federal Cooperative Research Program, Utah.*** Conducted studies of low altitude supercooled liquid water (SLW) in winter storms using tower-mounted ice detectors and supporting meteorological sensors during the winter of 1986-87. Analyzed and published the observational data, demonstrating the utility of the specialized systems in identifying seeding opportunities and in providing documentation of seasonal low altitude SLW occurrence and magnitude. Compared time-resolved SLW measurements with precipitation rate observations to identify periods of apparent low natural precipitation efficiency, i.e., apparent cloud seeding opportunity.

***Research and Operations on Deep Summer Convection, Water District, San Angelo, Texas.*** Directed radar-coordinated airborne cloud seeding operations on deep convective clouds in Texas. In 1989, operated radar to support and coordinate carefully controlled, randomized airborne cloud seeding trials to obtain experimental units toward evaluation of the effectiveness of the dynamic seeding method.

***Weather Modification Research, Operations and Technology Transfer, Taiwan, Republic of China.*** Managed/conducted cloud seeding and related research project operations in Taiwan in 1992, 1993 and 1994 for Taiwan's Central Weather Bureau (CWB). Ground-based and airborne operational cloud seeding and SF<sub>6</sub> plume tracking studies, plus airborne meteorological measurements by an instrumented aircraft were coupled with climatology efforts. Toward technology transfer, gave presentations to CWB staff on cloud seeding methodologies and provided hands-on training on various aspects of applying the technology in Taiwan.

***Weather Modification Operations, Several Water Districts/Agencies, Municipalities.*** From 1979 through the present, has designed, managed, conducted and evaluated numerous projects, primarily for precipitation increase, in several States and overseas. Many of the projects involved target-control statistical evaluations.

***Weather Modification Research and Operations, Large Mining Operation, Northern Utah.*** Conducted a climatological study of cold fog occurrences which hamper mine operations. Based on the climatological study, designed and conducted a field demonstration project for fog dispersal in the mine area using cloud seeding technologies.

***Weather Modification Operation, Honduras, Central American.*** Directed airborne cloud seeding operation for rainfall increase from deep convective clouds in Honduras in 1997.

***Weather Modification Feasibility Studies.*** Conducted a number of feasibility studies for prospective cloud seeding projects.

## **SPECIALIZED TRAINING**

Hydrologic measurement principles and data analysis for meteorology, Atmospherics, Inc., Fresno, CA, 1986

BASIC Programming and Computer System Ops, TEKTRONIX, Santa Clara, CA, 1979

Short Course on Cloud Physics, University of Colorado, 1977

Air Traffic Control Phraseology, FAA, Longmont, CO, 1973

Radar Meteorology, Technology Service Corporation, Silver Spring, MD, 1975

FORTTRAN IV, beginning level, NCAR, Boulder, CO, 1974

## **PROFESSIONAL AFFILIATIONS**

Member - American Meteorological Society

Weather Modification Association Member since 1975

President 1993-1994

Certified Project Manager (#10), since 1986

Certified Project Operator (#50), since 1986

Member - Association of State Dam Safety Officials

Member - American Water Resources Association

## **WORK HISTORY**

Vice President

North American Weather Consultants

Salt Lake City, Utah

1999 - Present

Physical Scientist/Project Manager/ Radar Meteorologist

TRC North American Weather Consultants

Fresno, California and Salt Lake City, Utah

1989 - 1999

Field Program Supervisor/Physical Scientist/Radar Meteorologist  
Atmospherics, Inc.  
Auburn and Fresno, California  
1979 - 1989

Support Scientist/Assistant Data Manager  
National Center for Atmospheric Research  
Boulder, Colorado  
1972 - 1979

#### **PUBLICATIONS AND PRESENTATIONS**

Mr. Solak has authored or co-authored more than 100 publications, including reviewed Journal papers, technical reports, conference papers and project reports. He has presented many papers at technical conferences.

#### **AWARDS**

Weather Modification Association – Thunderbird Award, 2004

**David Yorty****EDUCATION**

M.S., Meteorology, University of Utah, 2001

B.S., Meteorology, University of Utah, 1999

**FORECASTING AND WEATHER MODIFICATION EXPERIENCE AND SKILL**

- Hurricane forecasting, 2005-2006
- Daily forecasts for a water district in California, Oct-May season, 2004-2006
- Forecasting for weather modification programs in Idaho, Utah, and Colorado, 2001-2006
- Participated in University of Utah local weather forecast contest during four academic years; ranked first place for two of those years
- Produced campus weather forecasts for University of Utah
- Official storm spotter for National Weather Service
- Good understanding of synoptic and mesoscale meteorology
- General knowledge of meteorological processes in a variety of latitudes and climate zones

**REPRESENTATIVE EXPERIENCE**

David Yorty is currently a Staff Meteorologist for North American Weather Consultants (NAWC) in Salt Lake City, Utah. NAWC provides meteorological consulting services in applied meteorology, weather forecasting, probable maximum precipitation studies, and weather modification. David conducts real-time weather monitoring and forecasting for weather modification activities, and directs cloud seeding operations. He has experience with this type of monitoring and forecasting over the past five years, for cloud seeding programs in Utah, Idaho, California, and Colorado. He also tracks the usage and servicing of a large array of ground-based Cloud Nucleating Generators (CNGs), and participates in data collection and analysis related to the effects of cloud seeding conducted by NAWC.

**PROFESSIONAL AFFILIATIONS**

American Meteorological Society  
Weather Modification Association



**RELATED WORK HISTORY**

Staff Meteorologist  
 North American Weather Consultants, Inc.  
 Sandy, Utah  
 2001-present

Research Assistant, Meteorology  
 University of Utah  
 Salt Lake City, UT  
 2000-2001

Teaching Assistant, Meteorology  
 University of Utah  
 Salt Lake City, UT  
 1999-2000

Volunteer work  
 National Weather Service  
 Boise, Idaho  
 1998 (summer)

**PUBLICATIONS**

Extreme Convection Observed by the Tropical Rainfall Measuring Mission (Master's Thesis, University of Utah, 2001)

Griffith, D. A., M. E. Solak and D. P. Yorty, 2005: Is Air Pollution Impacting Winter Orographic Precipitation in Utah?, J. of Wea. Modif., Vol. 37, pp. 14-20.

Solak, M.E., D. P. Yorty and D. A. Griffith, 2005: Observation of Rime Icing in the Wasatch Mountains of Utah: Implications for Storm season Cloud Seeding, J. of Wea. Modif., Vol. 37, pp. 28-34.

Solak, M.E., D. P. Yorty and D.A. Griffith, 2003: Estimations of Downwind Cloud Seeding Effects in Utah, J. of Wea. Modif., Vol. 35, pp. 52-58.

**APPENDIX C**

**SANTA BARBARA II 700 MB WINDS DURING CONVECTIVE BANDS**





Santa Barbara Wind Data and Averages for Convective Bands

Dir	Speed (kts)	Dir	Speed (kts)	Dir	Speed (kts)
230	33	210	35	229	24
230	33	215	23	216	33
230	35	275	20	190	46
230	35	260	12	200	42
240	35	230	41	260	22
260	35	240	39	270	29
170	15	215	48	270	41
230	24	222	45	260	43
230	30	225	45	260	43
240	25	240	33	162	43
260	25	200	52	265	32
270	26	210	62	155	35
270	25	215	54	175	22
280	25	245	37	190	35
240	31	240	37	212	30
240	32	235	37	155	23
220	28	235	35	210	22
250	39	203	13	225	20
245	30	235	39	250	18
260	29	220	43	220	52
270	30	235	15	260	30
270	32	235	37	251	40
285	42	240	44	265	38
275	57	220	44	230	42
270	35	195	45	210	37
275	44	215	55	193	54
260	45	220	51	202	56
240	36	230	54	240	43
220	54	160	21	256	49
225	24	190	44	199	8
240	46	195	37	197	33
240	39	238	35	210	35

## Santa Barbara Wind Data and Averages for Convective Bands (Continued).

Dir	Speed (kts)	Dir	Speed (kts)	Dir	Speed (kts)
210	35	225	28	245	21
257	45	235	32	280	24
264	34	235	32	252	31
260	25	235	34	255	28
258	33	235	27	255	28
188	22	230	27	207	44
200	12	226	28	213	33
258	48	270	30	225	44
223	22	255	35	230	40
223	22	268	38	215	45
207	60	268	38	217	38
225	38	268	41	240	38
241	32	265	33	225	37
228	48	260	58	192	46
225	43	273	46	200	44
225	43	243	26	286	38
209	44	250	35	241	42
260	27	205	28	236	36
270	43	210	50	239	47
268	54	275	44	230	44
280	44	230	17	225	26
275	30	228	25		
270	33	255	26	<b>Average:</b>	
270	33	240	28	<b>234</b>	<b>36</b>
225	27	230	40		
226	31	265	32		
225	30	220	40		
237	43	230	46		
230	40	227	44		
210	36	181	38		
225	30	226	23		
221	34	240	36		

**APPENDIX D**

**AHOGS SPECIFICATIONS**



## AHOGS

### **Automated High Output Ground Seeding Systems North American Weather Consultants, Inc.**

These field-proven systems are designed for intensive seeding of convective cloud systems from strategically located ground based sites using pyrotechnic devices (flares). These are updated versions of systems used by North American Weather Consultants for cloud seeding operations and research in past years. NAWC is currently operating multiple AHOGS systems for cloud seeding in Santa Barbara County, California.

The AHOGS allows automated, focused, high-output seeding releases from remote field sites under program control from a PC located at the seeding project control center. Thus, the project meteorologist has the ability to conduct intensive seeding of convective rain bands or other organized convective systems as they track into and across, or persist over, the project area under varying wind flow regimes.

The AHOGS field systems are built to withstand and operate reliably under harsh field conditions, consisting of the following primary field site components.

- Flare masts which each hold 16, 150-gm (fast acting AgI) flares.
- An environmentally sealed control box containing a cellular phone communications system, digital firing sequence relays/controller, datalogger and system battery.
- A solar panel/charge regulation system to maintain site power.
- Cellular phone communications antenna.
- Lightning protection.

The AHOGS flare sites are controlled via a modem-equipped PC at the operations center, running custom software to manage the flare seeding operations. The meteorologist has the option of firing flares individually in real time, or to order batch firing of any number of flares at selectable intervals at each remote field site, e.g., three flares at selectable time intervals, beginning at any selected time. The software allows monitoring and reporting of site status information, such as flare inventory and battery voltage.

At each field site, the system is designed for easy reloading of flares, easy system operations testing and reset of onsite flare inventory via the integrated datalogger.

*North American  
Weather Consultants, Inc.*

8180 South Highland Dr., Suite B-2  
Sandy, Utah 84093

801-942-9005

# COUNTY OF LOS ANGELES WEATHER MODIFICATION PROJECT



## FINAL MITIGATED NEGATIVE DECLARATION

*Prepared by TRC for*  
The County of Los Angeles Department of Public Works

**October 6, 2009**

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**Environmental Checklist Form**  
**Prepared Pursuant to the California Environmental Quality Act (CEQA)**

**1.0 PROJECT OVERVIEW**

**1.1 PROJECT TITLE/FILE NO.**

County of Los Angeles Weather Modification Project

**1.2 LEAD AGENCY**

County of Los Angeles Department of Public Works

**1.3 CONTACT PERSON**

William Saunders

**1.4 PROJECT SPONSOR**

County of Los Angeles Department of Public Works

**1.5 PROJECT LOCATION**

The Weather Modification Project is located in Los Angeles County, California. A total of 15 seeding sites are included within the Project Description (see Section 1.8 below). As indicated in Table 1, 10 sites will be used during the initial phase of the project and five additional sites may be used during future expansion of the program. All sites are located on property owned by Los Angeles County Flood Control District (LACFCD) along the southern slope of the San Gabriel Mountains as shown in Figures 1 and 2. Table 1 lists the 15 site names and numbers included within the Project Description. The table indicates the 10 initial sites that will be utilized and the type of equipment to be installed. Table 1 also indicates whether the location has been used for past cloud seeding projects or is a new site near a previously used location.

**Table 1. Project Sites**

Site Number <sup>1</sup>	Site Name	Manual, Remote, or Future Installation	New or Prior Location
1	Pacoima Dam	Future	New
2	Lopez Canyon Channel DRI	Future	New
3	Cassara Debris Basin	Future	New
4	Zachau SPS (near Debris Basin)	Initial - Manual	New
5	Dunsmuir Debris Basin	Initial - Remote	Past
6	Winery Canyon Debris Basin	Initial - Manual	Past
7	Lincoln Debris Basin	Initial - Manual	New
8	Kinneloa West Debris Basin	Initial - Remote	Past
9	Santa Anita Debris Basin	Future	Past
10	Sawpit Debris Basin	Initial - Remote	Past
11	Spinks Debris Basin	Initial - Manual	New
12	Morris Dam	Initial - Remote	Past
13	Hook West Debris Basin	Initial - Manual	New
14	Big Dalton Debris Basin	Future	New
15	Big Dalton Dam	Initial - Manual	Past

<sup>1</sup>Site numbers correspond to Figures 1 and 2.

## 1.6 GENERAL PLAN DESIGNATION

The cloud nuclei generators (CNGs) will be located within various cities and unincorporated county territory along the southern slopes of the San Gabriel Mountains. The project will use dams, debris basins, and sediment placement sites that are owned by the Los Angeles County Flood Control District and are used in conjunction with maintenance activities. The CNGs will not alter the existing use of the sites for flood control and water conservation purposes. Table 2 details the planned land use for each site.

**Table 2. Jurisdiction and Land Use**

Site	Local Jurisdiction	Planned Land Use
1	UNINCORPORATED LA COUNTY	NON-URBAN
2	UNINCORPORATED LA COUNTY	OPEN SPACE
3	UNINCORPORATED LA COUNTY	OPEN SPACE-NATIONAL FOREST
4	CITY OF LOS ANGELES	OPEN SPACE
5	GLENDALE	RECREATIONAL/OPEN SPACE
6	LA CANADA FLINTRIDGE	PUBLIC OPEN SPACE
7	UNINCORPORATED LA COUNTY	FLOOD CONTROL
8	UNINCORPORATED LA COUNTY	OPEN SPACE
9	ARCADIA	PUBLIC FACILITY
10	MONROVIA	OPEN SPACE/RECREATIONAL
11	BRADBURY	OPEN SPACE
12	UNINCORPORATED LA COUNTY	OPEN SPACE-NATIONAL FOREST
13	GLENDORA	UTILITY/FLOOD CONTROL
14	GLENDORA	UTILITY/FLOOD CONTROL
15	GLENDORA	OPEN SPACE (CONSERVATION)

The target watersheds are within the Angeles National Forest. Ecologically valuable riparian and wetland areas within the watersheds may benefit from the additional moisture (Weather Modification Program Negative Declaration, 1998). Improved watershed conditions are part of the Forest Service's Land Management plan to manage and assure the sustainability of high quantity and quality water within the ecosystem (Land Management Plan, Part 1 Southern California National Forests Vision, 2005).

## 1.7 ZONING

The CNGs have different zoning and land use classifications as determined by the jurisdiction. Many fall into the general category of open space or recreation. Table 3 provides information on the zoning for each facility to be used in the project, along with a description of what the zoning classification represents.



**Table 3. Jurisdiction and Zoning**

Site	Local Jurisdiction	Zoning	Description
1	LA COUNTY	W	WATERSHED
2	LA COUNTY	M-1.5	MANUFACTURING
3	LA COUNTY	A-2-1	HEAVY AGRICULTURAL
4	LA CITY	OS	OPEN SPACE
5	GLENDALE	SR	SPECIAL RECREATION
6	LA CANADA FLINTRIDGE	OS	PUBLIC OPEN SPACE
7	LA COUNTY	R-1-1000	RESIDENTIAL
8	LA COUNTY	R-A-2	RESIDENTIAL AGRICULTURAL
9	ARCADIA	R-M	RESIDENTIAL-MOUNTAIN
10	MONROVIA	HR	HILLSIDE -RECREATIONAL
11	BRADBURY	OPEN SPACE	OPEN SPACE
12	LA COUNTY	W	WATERSHED
13	GLENDORA	E7-200000	RESIDENTIAL
14	GLENDORA	OS-N	OPEN SPACE-NATURAL ZONE
15	GLENDORA	OS-N	OPEN SPACE-NATURAL ZONE

The targeted watersheds are located within the Angeles National Forest (ANF) and comprise a large portion of the southern slopes of the San Gabriel Mountains. Land-use zones within the ANF for the target watersheds are:

- Back Country
- Critical Biological
- Recommended Wilderness
- Back Country, Non-Motorized
- Developed Area Interface
- Back Country Motorized Use Restricted
- Existing Wilderness
- Experimental Forest

Ecologically valuable riparian and wetland areas within the watersheds may benefit from the additional moisture (Weather Modification Program Negative Declaration, 1998). Improved watershed conditions are part of the Forest Service's Land Management plan to manage and assure the sustainability of high quantity and quality water within the ecosystem (Land Management Plan, Part 1 Southern California National Forests Vision, 2005).

## **1.8 PROJECT BACKGROUND AND DESCRIPTION**

Cloud seeding has been practiced throughout California and the Western United States for over half a century. The LACFCD has a long history of utilizing cloud seeding during storm seasons (October to May). The County of Los Angeles Weather Modification Project proposes resuming cloud seeding activities within Los Angeles County.

### **1.8.1 Project Background**

This section provides background on the history of cloud seeding activities within Los Angeles County and the associated environmental reviews. It also discusses recent cloud seeding in other areas of California and the Western United States. The last part of this section describes research findings, recommendations for further studies to improve cloud seeding, and provides insight into which agencies and governments are involved in cloud seeding activities.

#### 1.8.1.1 The Science of Cloud Seeding

The science of weather modification, or cloud seeding, began in the 1940s with the discovery that certain materials caused the formation and growth of precipitation particles when injected into certain types of clouds. Extensive laboratory and field studies have shown that it is possible to obtain reasonably predictable results from cloud seeding activities.

Precipitation and weather modification depend on the existence of clouds, which are composed of varying concentrations of water droplets or water droplets and ice crystals. These droplets and crystals generally form around naturally occurring, microscopic airborne particles that are classified as either cloud condensation nuclei or ice nuclei. Water vapor condenses to form droplets upon cloud condensation nuclei, whereas ice crystals form upon ice nuclei. Precipitation is primarily produced within clouds by two temperature-dependent processes, which are typically referred to as "warm cloud" and "cold cloud" processes.

The warm cloud process occurs when cloud temperatures are above freezing and cloud water droplets collide with each other to form larger droplets with sufficient weight to overcome the upward movement of the cloud. The water droplets then fall from the cloud as rainfall. Because cloud temperatures are above the freezing point ice nuclei are not involved in this process.

The cold cloud process occurs when cloud temperatures are below freezing. Cloud droplets can remain unfrozen at below freezing temperatures, but as they come in contact with ice nuclei they will freeze. Once a new ice crystal is formed, it can grow through deposition of water from neighboring cloud droplets or water vapor. Ice crystals within the cloud can also increase in size as they fall collecting unfrozen water droplets on their appendages. One or both of these processes can lead to the growth of a tiny ice crystal into a snowflake. Depending on the ambient air temperature near the ground, the snowflakes will fall as snow if temperatures are below freezing or melt and reach the ground as raindrops if temperatures are above freezing.

Cloud seeding techniques exist for warm and cold cloud processes. Warm cloud seeding generally is considered for augmenting summertime clouds (ASCE, 2006). The arid summertime climate experienced by the Los Angeles County region makes warm cloud seeding impractical. As such, cold cloud seeding has been pursued.

Cloud seeding takes advantage of the physics of the cold cloud process to increase the amount of precipitation that ultimately reaches the ground. In many storm systems, clouds have ample water vapor but lack adequate numbers of natural ice nuclei necessary to efficiently produce precipitation. Cloud seeding operations are most effective in these situations. Artificial ice nuclei can be introduced into portions of clouds that contain cloud droplets below freezing. This causes the formation of additional ice crystals and eventually snowflakes. This makes the cloud system more efficient in producing precipitation. The most commonly used cloud seeding agent in seeding "cold clouds" is silver iodide (AgI). Silver iodide can either be dispersed from ground generators or from aircraft.

Cloud Nuclei Generators (CNGs) and seeding flares proposed for this program efficiently disperse AgI nuclei in the minus 5 degrees Celsius (-5°C) to -15°C range. This is the temperature range in which most clouds lack adequate numbers of natural ice nuclei. The addition of AgI nuclei causes super-cooled liquid water droplets to convert into ice crystals and produces additional precipitation from the seeded clouds.



#### 1.8.1.2 Historical Cloud Seeding Activities within Los Angeles County

Prior cloud seeding activities were conducted in Los Angeles County between 1957 and 2002. Experimental cloud seeding activities were conducted in the County between 1957 and 1961. After this period, cloud seeding efforts increased due to the success of the experimental phase and were carried out continuously between 1962 and 1976.

Fire damage in target watersheds rendered the cloud seeding activities to be carried out intermittently on a year-to-year basis from 1976 to 2002. The fires removed vegetation and exposed soil to increased erosion.

The weather modification activities conducted in Los Angeles County between 1999 and 2002 were implemented under a California Environmental Quality Act (CEQA) Negative Declaration (TRC, 1998). The 1998 Final Negative Declaration analyzed potential environmental impacts that could potentially result from seeding unit installation and operation of the cloud seeding program. No significant impacts were found to be associated with cloud seeding activities.

In 2002, the Curve and Williams Fires burned a majority of the San Gabriel and Big Tujunga Canyon watersheds and the Cloud Seeding Program was suspended. No cloud seeding has taken place since April 15, 2002.

#### 1.8.1.3 Recent Cloud Seeding Activities in California

During the 2005-2007 seasons, there were 14 active cloud seeding projects or programs within the State of California (DWR, 2009). Table 4 provides a list of the programs and their sponsor. Several of these programs in the Sierra Nevada date back to the 1950's and 1960's. Proponents for these programs are mainly municipal agencies, water and irrigation districts, and utility companies. Santa Barbara and Monterey Counties both conduct cloud seeding programs. Historically, twelve programs are active during a normal year. The number of programs increases during drought years. There were 20 active cloud seeding programs in California in 1991 (DWR, 2009).

**Table 4. 2005-07 California Cloud Seeding Programs and Sponsors**

<b>Program</b>	<b>Program Sponsor</b>
Lake Almanor	Pacific Gas and Electric Company
Tahoe-Truckee	Desert Research Institute
Upper American River	Sacramento Municipal Utility District
Upper Mokelumne River	Pacific Gas and Electric Company
Carson and Walker River	Pacific Gas and Electric Company
Tuolumne River	Turlock and Modesto Irrigation Districts
San Joaquin River	Southern California Edison
Eastern Sierra	City of Los Angeles
Kings River	Kings River Conservation District
Kaweah River	Kaweah Delta Water Conservation District
Kern River	North Kern Water Storage District
Santa Barbara County	Santa Barbara County Water Agency
Monterey County	Monterey County
North Fork Stanislaus River	Northern California Power Agency

The Santa Barbara County Planning and Development Department prepared a Negative Declaration (00-ND-29) for their cloud seeding program. The document determined that there were no adverse impacts associated with cloud seeding that could not be adequately mitigated to a level of less than significant (Santa Barbara County, 2000 and 2008). Pursuant to the California Environmental Quality Act Guidelines (CEQA), the Santa Barbara County Board of Supervisors approved the document and cloud seeding has been conducted from 2001 to the present.

#### 1.8.1.4 Recent Cloud Seeding Activities in the Western United States

Outside of California, there are currently 14 winter cloud seeding programs in operation within the upper Colorado River region of Colorado, Utah, and Wyoming (DWR, 2009). More programs are planned for this region, including some within the state of Arizona (DWR, 2009). The locations of the 14 current program areas and 15 potential new program areas are provided in Figure 3 (Griffith and Solak, 2006). The blue areas represent operational cloud seeding watersheds. The red areas represent potential cloud seeding target watersheds. There are a number of other winter cloud seeding programs being conducted outside the Colorado River Basin in the states of Idaho, Nevada, Utah, and Wyoming.

#### 1.8.1.5 Support for Cloud Seeding Activities

There is support for cloud seeding activities at federal, state, and local levels in the United States. Research has been conducted in this area for over 50 years. At the federal level, the 111<sup>th</sup> Congress introduced legislation that may re-establish federal funding for cloud seeding research (Senate Bill S. 601-Weather Mitigation Research and Development Policy Authorization Act of 2009). This bill would authorize the proposed Weather Mitigation Office, under the existing National Science Foundation, to establish a grant program for awarding grants to eligible entities. These entities include state agencies, institutions of higher education, and nonprofits that have expertise in the field of weather mitigation. The grants would provide funding for research and development of projects that pertain to weather mitigation. The Western States Water Council, all 7 Colorado River Basin states, and the Colorado River Board of California support this legislation (DWR, 2009).

The United States Bureau of Reclamation (USBR) has prepared two Environmental Impact Statements under the National Environmental Policy Act (NEPA) for cloud seeding activities (DWR, 2009). The USBR findings are reported within the Project Skywater programmatic environmental statement of 1977 and its Sierra Cooperative Pilot Project environmental impact statement of 1981 (DWR, 2009).

The National Academy of Science (NAS) supports research in cloud seeding activities. In 2003, NAS published the document "Critical Issues in Weather Modification Research", which recommended:

*"Research in weather modification should take full advantage of opportunities offered by other field research programs and operational weather modification activities."*

*"Because weather modification could potentially contribute to alleviating water resource stresses.....the Committee recommends that there be a renewed commitment to advancing our knowledge of fundamental atmospheric processes that are central to issues of intentional and inadvertent weather modification."*

Many states in the West experience droughts and limited water supplies. Most of these states support weather modification in the form of cloud seeding. The California Department of Water Resources supports the increased utilization of cloud seeding to enhance water supply within



the state and feel that state support should be provided to current and future projects (DWR, 2009). DWR also feels further research and development should be supported to increase efficiency and efficacy of cloud seeding programs. DWR's recommendation #1 to increase precipitation enhancement states:

*"The State should support the continuation of current projects as well as the development of new projects and help in seeking research funds for both old and new projects. Operational funding support for new projects may be available in the Integrated Regional Water Management program."*

Utah is another state with many years invested in weather modification activities. In 1973, the Utah legislature passed laws 73-15-3 through 8, which form a comprehensive weather modification law for the state of Utah (Stauffer, 2001). This legislation authorizes the Utah Division of Water Resources (UDWR) to regulate and develop cloud seeding programs within the State. The UDWR has been involved in cost sharing with the local cloud seeding programs since the winter of 1975-76. The East Box Elder and Cache County cloud seeding program resulted in a 17 percent average increase in rainfall over a period of 19 storm seasons. Augmented water supplies are typically used for irrigated agriculture or municipal water supplies. (Griffith, et al, 2009)

At the local level in California, several agencies and local governments are involved in cloud seeding. The LACFCD was one of the first local agencies to participate in weather modification through cloud seeding, as discussed above. The Santa Barbara County Water Agency also supports cloud seeding operations. Their cloud seeding program has resulted in up to 15% increased rainfall within their region. Santa Barbara County's cloud seeding program has added storm runoff water to their reservoirs and has increased groundwater in local aquifers. It has also provided irrigation affects on local grasslands and crops (Water Resources of Santa Barbara County, Santa Barbara Water Agency, July 2000).

Besides these government entities, both the American Meteorological Society and the World Meteorological Organization have issued policy statements that support the assertion that cloud seeding is an effective tool for enhancing and increasing precipitation (DWR, 2009).

The California Department of Water Resources summarized the findings of the USBR environmental documents and findings from other cloud seeding review studies (DWR, 2009). DWR found that the available evidence did not show that seeding clouds with silver iodide causes a decrease in downwind precipitation. The report states that in some cases, the increased rainfall may extend up to 100 miles downwind of the target watershed (Ref. 1981 SCPP EIS). According to the USBR, the small amounts of silver iodide used in cloud seeding are minimal. They are often 100 times less than industry emissions into the atmosphere in many parts of the country. They are also lower than the exposure limits people get from tooth fillings. Watershed concentrations would be extremely low because only small amounts of seeding agent are used. Accumulations in the soil, vegetation, and surface runoff have not been large enough to measure above natural background levels. The DWR supports these findings and asserts that utilization of cloud seeding activities can be conducted without significant adverse impacts to the natural and human environment.

### **1.8.2 Project Description of the LACFCD Cloud Seeding Program**

The Los Angeles County Department of Public Works (LACDPW), acting in behalf of the LACFCD, will conduct a cloud seeding program targeting watersheds tributary to reservoirs located in the San Gabriel Mountains. Cloud seeding operations will be conducted by North



American Weather Consultants, Inc. (NAWC). This professional weather modification company has conducted numerous cloud seeding programs in the western United States and has conducted almost every LACDPW cloud seeding program in the San Gabriel Mountains dating back to 1961.

The following sections discuss a general overview of the program, installation of the manual and remotely operated cloud nuclei generators (CNGs), and operation of the CNGs.

#### 1.8.2.1 General Overview of the Cloud Seeding Program

This project will augment winter precipitation beginning with the 2009-10 storm season. The target watersheds are tributary to Pacoima, Big Tujunga, and San Gabriel Reservoirs as shown in Figure 1. Ground based seeding generators will be used for the program and will be located on lands owned by the LACFCD.

Figure 2 depicts the 15 potential sites that may be utilized for the program as detailed within the San Gabriel Mountains Cloud Seeding Program Report dated April 8, 2009 (Griffith, 2009). NAWC will utilize ten ground based seeding sites the first year of the program. Other sites may be added later if the program is extended into the additional two years allowed under this program.

The watersheds for the proposed cloud seeding program were targeted because downstream LACFCD facilities exist to capture the additional runoff. The runoff will be impounded in reservoirs and the water will be released once the storms have passed. The water will flow into a series of rivers and channels that lead to water conservation spreading basins. At the spreading basins, the runoff percolates into underground aquifers and is eventually pumped for municipal use.

The cloud seeding generators/dispensers will be installed at the locations listed in Table 1 during the initial phase of the program. Future expansion of the program may utilize the remaining 5 sites. All indicated locations are owned by the LACFCD and are the closest flood control and water conservation facilities to the target watersheds. The 10 sites chosen during the initial phase of the project are based on wind studies as detailed in the Program Report. The initial analysis also considered proximity to the burned areas resulting from the Merek and Padua fires.

All the CNG locations are fenced, and have controlled access through locked gates. No trespassing signs are posted. These measures prohibit public access by potential hikers and prevent unauthorized entry into flood control and water conservation facilities. In all cases, the manual generators will be secured with a chain attached to an existing facility or an "I-bolt" concreted in place. Propane tanks will be locked. Both measures will prevent tampering by unauthorized personnel. Additionally, another chain link fence will be installed around the remote generator installations and slats will be inserted into the chain links.

The cloud seeding program is expected to generate an average annual increase of 10 to 15 percent in seasonal rainfall over the targeted reservoir watersheds during the seeded winter seasons. This represents a maximum increase of 15 percent in rainfall above the levels expected if the same storm went unseeded. Past program results in Santa Barbara County achieved up to 20 percent increases in rainfall.

The added rainfall benefit is determined statistically using a "target" and "control" rain gage comparison technique (Griffith, et al, 2002). Rainfall data for unseeded storms at the target

and control rain gages are compared to seeded storm data at the same gages. The incremental difference based on mathematical analysis is the benefit achieved by the cloud seeding operation. This direct rainfall measurement method provides the best basis for project evaluation (ASCE, 2004).

#### 1.8.2.2 Cloud Seeding Generator Installation and Removal

Two different types of seeding agent dispensers will be utilized in this program. The first type is a manually operated, ground based silver iodide generator. The second is a remotely controlled, ground based, silver iodide flare tree. Six manually operated sites will be operated at locations 4, 6, 7, 11, 13, and 15 indicated in Figure 2. Four remotely operated sites will be operated at locations 5, 8, 10, and 12 shown in Figure 2. Both types of equipment installations will be secured to withstand 71 mph maximum wind speeds. The average wind speed at which all the equipment is likely to operate is 10-20 mph. The CNGs will be situated to take advantage of winds which carry the seeding material up into storm clouds over the target areas. The remotely controlled silver iodide flare tree installations are considered to be more effective than the manually operated silver iodide generators.

Installation of the generators is detailed within the San Gabriel Mountains Cloud Seeding Program Report, dated April 8, 2009. Installation requires no more than two days per generator and a total of 3 people. A brief description of the installation for each type of unit is described below.

At the end of the season, manually operated CNGs will be removed from the sites for off-season storage (May through September). The solar panel, battery, and some of the electronics equipment associated with the four remote flare sites will also be removed during the off season. The flare trees and central communication mast will remain on site. The removed equipment will be stored in a self-storage facility near the project area.

#### MANUALLY OPERATED UNITS

Manually operated, ground-based cloud nuclei generators (CNGs) are designed and assembled by NAWC. Figure 4 is a photograph of a manually operated CNG and Figure 5 provides a cut-away schematic of the CNG. Each CNG consists of a tank that holds the seeding solution, a flow meter to regulate consumption of the solution, a burn chamber where the solution is burned in a propane flame, and a windscreen to shield the burn chamber from wind. Each CNG will be secured to the ground, to a dam structure, or fastened securely to railings. The stainless steel manually operated CNGs will be approximately 12 inches in diameter and 36 inches high. Each CNG will connect to a large-capacity propane tank of 250 to 500 gallons. These tanks will be supplied by a third-party propane company.

The specific location of each manual generator site will be clearly marked at the selected facility. A local propane supplier will deliver the propane tank with a 250 to 500 gallon capacity. Once the propane tank is on site, a NAWC technician will install the manual generator using rebar driven approximately 12-18 inches below grade. If the unit is located at a dam structure, the unit may be attached to a metal guard rail. When the unit is appropriately anchored in place and connected to the propane supply, the technician will run the equipment for 10 minutes to determine that it is operating correctly. The manual generator installation process can be completed within one day for each site.

#### REMOTELY OPERATED UNITS

This project will utilize ground based, remotely controlled silver iodide flare units that will be designed specifically for this project by NAWC. These units will consist of a central control



mast on which the electronics, battery, solar panel, and communications antenna are mounted. A data modem and program provided by Campbell Scientific will be accessed through a cell phone connection utilizing a special access code. One or two flare masts will be connected to the main mast.

Each flare mast holds 10 to 20 silver iodide flares, which are similar to highway emergency flares used at accident scenes. These flares burn from the mast for approximately 4 minutes and release 15 grams of silver iodide. Each flare is fitted with a cylindrical spark arrestor to ensure that no sparks reach the ground. Figure 6 provides a photograph of a NAWC designed unit being used on a winter seeding program in Santa Barbara County. Figure 7 provides a photograph of the seeding flares without the spark arrestors in place.

Installation of the remote units requires two days of labor. On the first day, three holes will be excavated approximately 12 inches in diameter and 36 inches deep. The NAWC technician will then install a 4-inch by 4-inch aluminum base in each hole. Finally, the holes are filled-in with concrete and allowed to harden.

On the second day, a central mast will be bolted to one of the three bases. This mast will be reach approximately 10 feet above the ground. An equipment box will be attached to the mast to house necessary equipment and hardware. This equipment box will include communications equipment, a control panel, a modem, and a 12-volt battery. A solar panel and cell phone antenna will be mounted near the top of this central mast. Finally, one horizontal rail will be mounted between the other two bases to form vertical supports for the rail. This rail will contain hardware for approximately 20 flare positions.

Once installation is complete, one cloud seeding flare will be ignited by remote control to verify that the system is remotely operational and all communications equipment is in working order. No other construction related impacts are anticipated for either the manual or remotely operated cloud seeding generators.

#### 1.8.2.3 Operation of Cloud Seeding Generators

##### MANUALLY OPERATED UNITS

Manually operated CNGs will require field personnel to visit the site and start the unit at the request of the program director. The CNGs operate by burning a solution of approximately 96 percent acetone ( $\text{CH}_3\text{COCH}_3$ ), three percent silver iodide and one percent sodium iodide (NaI). The silver iodide acts as the ice nuclei on which ice crystals form, and the sodium iodide acts as a catalyst to dissolve the AgI in acetone.

Each manually operated CNG holds approximately 8 gallons of acetone/AgI solution. The solution burns at a rate of 0.24 gallons per hour (gal/hr), with the AgI in solution being burned at 24 grams/hr. Propane is burned at a rate of approximately 0.75 gallons per hour, allowing approximately 30 hours of operation before the propane tank requires refilling. Each CNG will be connected to a large-capacity propane tank located 15 to 20 feet away. The propane supply tank will be refilled once or twice per storm season depending upon operational needs. Periodically, a NAWC employee will visit the site to perform general maintenance and refilling of the seeding solution. Figure 4 is a photograph of a manually operated CNG and Figure 5 provides a cut-away schematic of the CNG.

## REMOTELY OPERATED UNITS

The ground based, remotely controlled, silver iodide flare units are designed specifically for this project and can be activated remotely by the program manager. Flares would only be ignited and burned on the flare tree as a "convection band" passed over one of the sites when rain is present to further reduce any concerns about small sparks hitting the ground.

Former research studies indicate that each winter frontal system passing through coastal Southern California contains at least one convection band, and often contains several. Flares will be ignited at rates as frequent as every 15 minutes during the passage of one of these convection bands over the seeding sites. This type of seeding has proven effective in a research program conducted in Santa Barbara County (Thompson, et al, 1975).

### 1.8.2.4 Storm Tracking and Targeting

The storm season for Southern California occurs between October and May. Typical cold winter storms in southern California are accompanied by winds blowing from the southwest, west, and northwest. Wind flow and temperature vary greatly from storm to storm. During storm season, a NAWC Project Meteorologist based in Sandy, Utah, will monitor weather conditions from NAWC's operations center. The operations center has internet access to all relevant National Weather Service (NWS) observations, analyses, weather satellite photographs, prognostic charts, forecasts, weather watches, and warnings.

The National Oceanic and Atmospheric Administration (NOAA) operates a network of sophisticated weather radars, called Next Generation Radars (NEXRAD), with sites in Los Angeles, Vandenberg Air Force Base (AFB), and Edwards AFB. The NEXRAD radar sites provide coverage for the San Gabriel Mountain range. These radars provide continuous depictions of weather echoes and the wind direction and wind speed at 1,000 foot intervals above the earth's surface as storms pass over the target area.

The meteorologist will also have access to the LACDPW Automated Local Evaluation in Real Time (ALERT) precipitation system to monitor rainfall as storms pass over the target area. The ALERT system is a countywide network of 166 radio transmitting gauges including 126 rain gauges distributed throughout the target region, of which 21 are located within the San Gabriel Mountains at altitudes varying from approximately 1,200 to 5,000 feet. The LACDPW maintains this system, which provides frequent real-time readouts of precipitation, reservoir levels, and stream flow.

As a "seedable" weather system is observed moving into the area, the Project Meteorologist will utilize all of the information from the sources above to make seeding recommendations. After consultation and approval from LACDPW, the meteorologist will devise a seeding schedule indicating which CNGs should be activated and the likely duration of the activation. The meteorologist will then continue to monitor the intensity and movement of storms through the target area. Special attention will be given to the potential for flash flooding development within the target watersheds. Updates to the seeding recommendations will be provided as needed throughout the storm event.

Due to varying conditions from storm to storm, not all of the CNGs or flare units may be used during each storm episode, nor would they necessarily operate for the same length of time. The Project Meteorologist will consider a number of factors in determining the proper targeting of the seeding effects. The meteorologist will recommend a time to discontinue seeding, pending LACDPW approval, based on observations later in the storm episode.



#### 1.8.2.5 Initiation of Cloud Seeding Activities

The LACDPW will make the final decision to initiate cloud seeding. Upon receiving a recommendation from the NAWC Project Meteorologist to initiate seeding, LACDPW staff will consider a variety of factors before agreeing to the recommendation. These factors include, but are not necessarily limited to:

- Water surface elevations behind LACDPW dams;
- Current inflow into the reservoirs;
- Estimated antecedent soil moisture in the target watersheds;
- Capacity in the channels downstream of the dams;
- Capacity at downstream spreading grounds;
- Forecasts of rainfall amounts from the approaching storm;
- Timing of the approaching storm within the storm season;
- Proximity of seeding sites to burned watersheds;
- Recent earthquakes within the targeted watersheds;
- NWS warnings within the targeted watersheds;
- Current search and rescue operations within the targeted watersheds; and
- Significant construction activities within the watersheds.

The Los Angeles County Flood Control District is the local agency responsible for flood control and stormwater conservation and LACDPW administers all flood control facilities on behalf of LACFCD. LACDPW will consider all circumstances surrounding an approaching storm and will use professional judgment to make the decision whether to initiate seeding.

#### 1.8.2.6 Restrictions and Suspension Criteria

To ensure that the project will not contribute to personal, property, or environmental injury, project suspension guidelines have been developed. Suspension of seeding may be necessary due to hazardous weather, lack of runoff storage capacity, precipitation-caused problems, or other special circumstances. Seeding will be temporarily suspended over areas that have recently burned, or exhibit unstable soils due to seismic events until natural re-vegetation occurs. This protective measure will help prevent undue erosion, landslides, mud flows, and/or downstream flooding.

The NAWC Project Meteorologist will recommend whether any restrictions or suspensions related to the weather may be necessary during each seedable storm event. The LACDPW Storm Operations Director will then decide whether to conduct cloud seeding using the meteorologist's input, and information on reservoir levels, ALERT system data, special event schedules, etc... The Storm Operations Director or his/her designated agent will be available at all times during seeding operations to make real-time decisions.

Certain weather-related circumstances may prevent seeding activities or trigger an immediate suspension of cloud seeding activities already in progress. The NWS issues special weather bulletins based on forecasts during periods of hazardous weather. These bulletins include Flash Flood Watches, Flash Flood Warnings, Traveler's Advisories, and Winter Storm Warnings. Flash Flood Warnings are issued when flash flooding has been reported or is forecast as imminent for certain streams or designated areas. Weather conditions resulting in the issuance of these flood warnings often occur in the program's target areas. If a Flash Flood Warning is issued for the target area, seeding would not be initiated. If seeding was already in progress, it would be suspended unless additional meteorological information from the NWS or the NAWC Project Meteorologist indicates that the forecast on which the warning was based had been down-graded. This ensures that portions of storms forecast to produce peak flows

and floods are not seeded in order to prevent personal, property, or environmental injury caused by naturally occurring weather phenomena. In addition, cloud seeding activities will not be initiated, or will be temporarily suspended, during any storm predicted to produce over 5.0 inches of rainfall within a 24-hour period in the target area.

Seeding will not necessarily be suspended solely on the issuance of NWS bulletins for less intense storm events such as a Traveler's Advisory, Winter Storm Warning, or Flash Flood Watch. These bulletins will be considered with other relevant data to determine impacts due to increases in precipitation in the relatively remote mountain areas. However, if the NWS issues a hazardous weather bulletin, the Project Meteorologist could recommend suspending seeding based on an analysis of weather conditions.

Suspension of seeding will occur during periods of heavy rainfall when the soil approaches the limit of its water-holding capacity. It will also be suspended if inflow to the reservoirs has substantially increased.

Rainfall and inflow will be closely monitored during all seeded storm events to determine if suspension of seeding is appropriate and/or necessary. If the targeted reservoirs were to become full, or nearly full, and capacity for containing excess runoff becomes questionable, seeding would be suspended for future storm events until sufficient reservoir storage capacity becomes available. Special conditions may develop within the target areas creating situations where precipitation is undesirable. These situations may include, but are not limited to, significant construction activities and search and rescue operations. Seeding will not be initiated during these situations. Suspension criteria for the program are outlined in Table 5.

The process of suspending activities will involve continually monitoring the criteria conditions described in Table 5. Once suspension criteria have been met, the LACDPW Storm Operations Director, in coordination with NAWC, will halt cloud seeding operations. NAWC operational personnel will turn off individual manually operated cloud seeding equipment within one hour. Remotely operated cloud seeding generators will be halted within 10 minutes. LACDPW will consider all relevant circumstances prior to restricting or suspending cloud seeding operations. Cloud seeding locations below suspension criteria thresholds will continue to be operated until the targeted storm has passed.

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**Table 5. Weather Modification Program Suspension Criteria**

Suspension Criteria	Description
1. Dam Operations	Cloud seeding operations for upcoming storms may be suspended if reservoir storage is at a level where additional inflow to the reservoir from upcoming storms may result in water releases greater than the capacity of the downstream water conservation facilities. This would result in loss of water to the ocean. Additionally, suspension could occur if dam and reservoir construction efforts are being significantly impaired by increased inflow from cloud seeding activities. Cloud seeding may resume when the probability of water loss to the ocean is reduced or risk to dam maintenance and construction activities are mitigated.
2. Precipitation	Seeding may be suspended if precipitation rates exceed 1.0 inch per hour within the target area. Seeding will be suspended if any storm is forecast to produce over 5.0 inches of rainfall within a 24-hour period in the target areas.
3. Weather Watch	Seeding will be suspended whenever the NWS issues a flash flood warning for the target areas. Whenever the NWS issues a Traveler's Advisory, Winter Storm Warning, or Flash Flood Watch, these notifications will be factored with other variables to determine whether seeding should be suspended.
4. Fire Damage	Fires within target areas will lead to immediate suspension of seeding activities in order to prevent undue erosion, mud flow hazards, or flooding downstream of an area that has been burned. Seeding suspension will continue until sufficient natural re-vegetation occurs to mitigate excessive erosion and sediment flows during storms.
5. Earthquake Damage	Earthquake damage to the soil structure may occur in target areas depending on the intensity and distance from the epicenter of an earthquake. During the storm season, if a 5.0 (Richter Scale) earthquake occurs within 50 miles, or a 4.0 (Richter Scale) earthquake occurs within 25 miles of any CNG installation site or target watershed, the suspension criteria will be activated. Damage to the soil structure may increase the potential for damaging landslides and mud flows during periods of moderate to heavy rainfall. After an earthquake, cloud seeding in the affected area may be suspended for the remainder of the storm season. LACDPW geology, geo-technical, and sedimentation personnel will analyze the impact to the soil structure and sediment transport potential to decide when cloud seeding may resume in the affected area.
6. Special Conditions	Seeding may be suspended due to special conditions such as significant construction activities, search and rescue operation, higher than normal public use such as holidays, and special events such as bicycle races or large public gatherings.
7. Los Angeles Basin	Seeding operations will not be conducted if they are predicted to have an impact within the Los Angeles Basin.
8. Special Authority	Seeding activities may be suspended for any circumstances that the LACDPW Operations Director or NAWC's Project Meteorologist deem unsafe. The Operations Director will make the final decision in the event of disagreement.

### **1.9 SURROUNDING LAND USES AND SETTING**

The CNGs will be located in the foothill areas upwind of the target watersheds. Due to the large population within the County of Los Angeles, there are many foothill communities. These communities border the flood and debris control facilities that will be used for the seeding generators.

The targeted watersheds are located within the Angeles National Forest (ANF) and comprise a large portion of the southern slopes of the San Gabriel Mountains. These areas are used for many recreational purposes, including: hiking, camping, fishing, biking, wilderness area, and skiing. The mountains and foothills are the home of many plant and wildlife species that are threatened and endangered. Special care must always be taken to prevent damage to the ecosystems during construction activities.

In order to prevent damage to the ecosystems, all of the CNGs will be located on previously graded sites on property owned by the Los Angeles County Flood Control District and used for flood control and water conservation activities. All the locations are currently used in conjunction with maintenance activities and have been developed with concrete and/or asphalt, and are surrounded by protective chain link fence to restrict public access.

### **1.10 REQUIRED APPROVAL OF OTHER PUBLIC AGENCIES**

This section discusses the need to get approval from other agencies for permits, financing approval, or due to a participation agreement.

There are currently no permit requirements for sites located within the unincorporated county areas. No permit requirements are expected at the local city level since the CNGs will be located at flood control and water conservation permitted sites on property owned by the LACFCD and managed by LACDPW. The CNGs will accompany existing features of the dams, debris basins, and sediment placement sites and are part of the water conservation program. Table 6 provides the jurisdictional agency for each Seeding Program site.

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**Table 6. Jurisdictions for All Seeding Program Sites**

Site	Local Jurisdiction
1	UNINCORPORATED LA COUNTY
2	UNINCORPORATED LA COUNTY
3	UNINCORPORATED LA COUNTY
4	CITY OF LOS ANGELES
5	GLENDALE
6	LA CANADA FLINTRIDGE
7	UNINCORPORATED LA COUNTY
8	UNINCORPORATED LA COUNTY
9	ARCADIA
10	MONROVIA
11	BRADBURY
12	LA COUNTY
13	GLENDORA
14	GLENDORA
15	GLENDORA

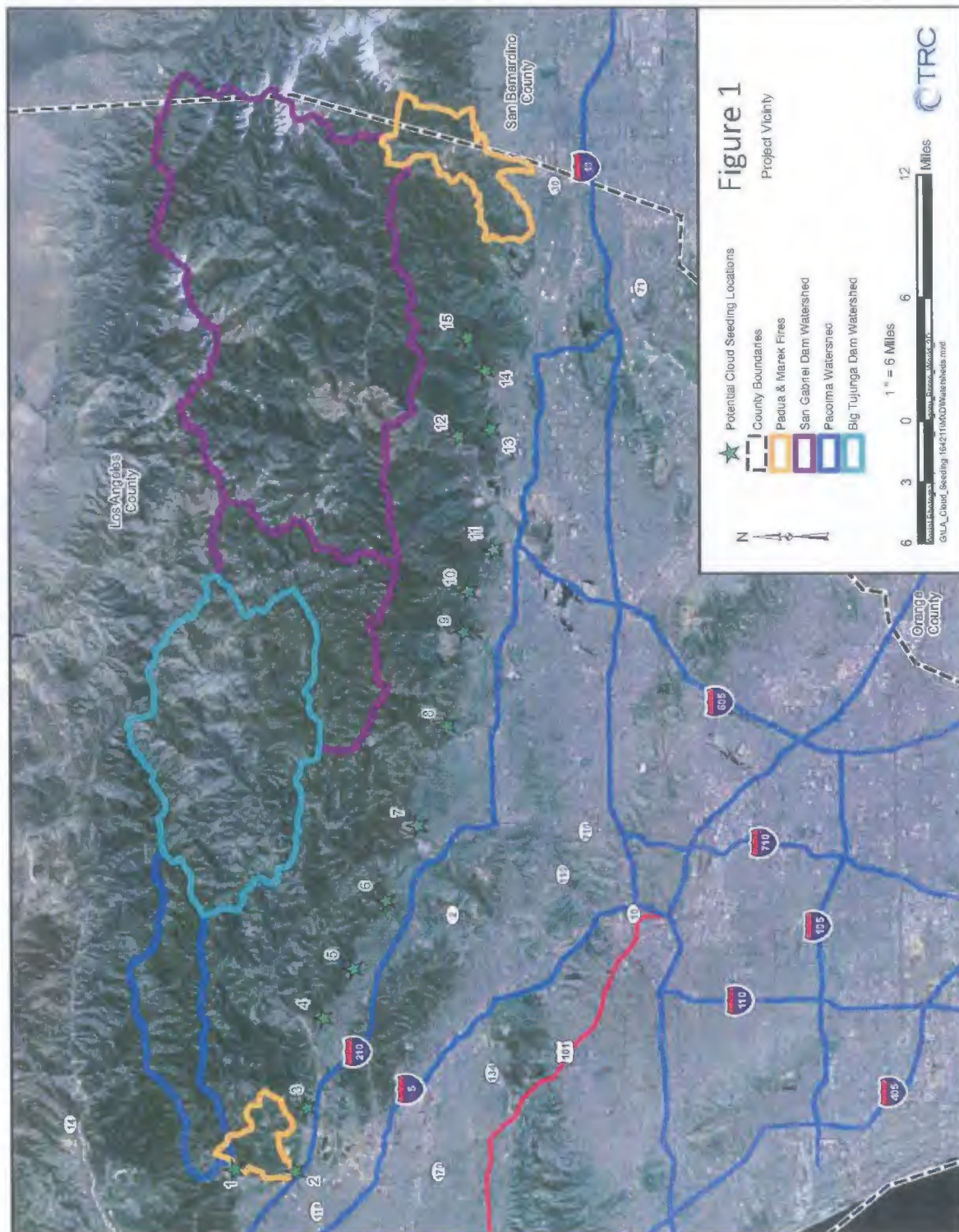


Figure 1. Project Vicinity



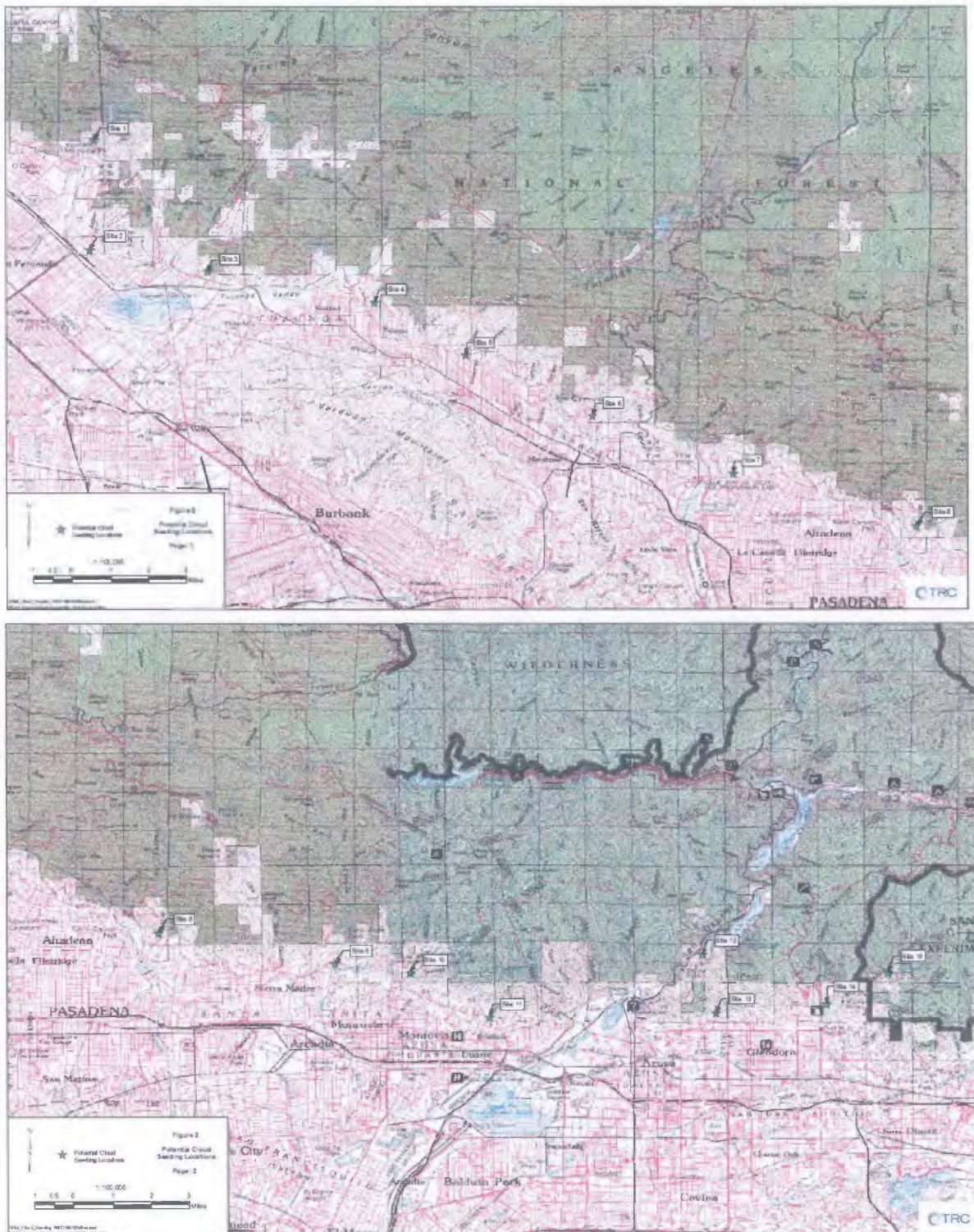


Figure 2. Project Location



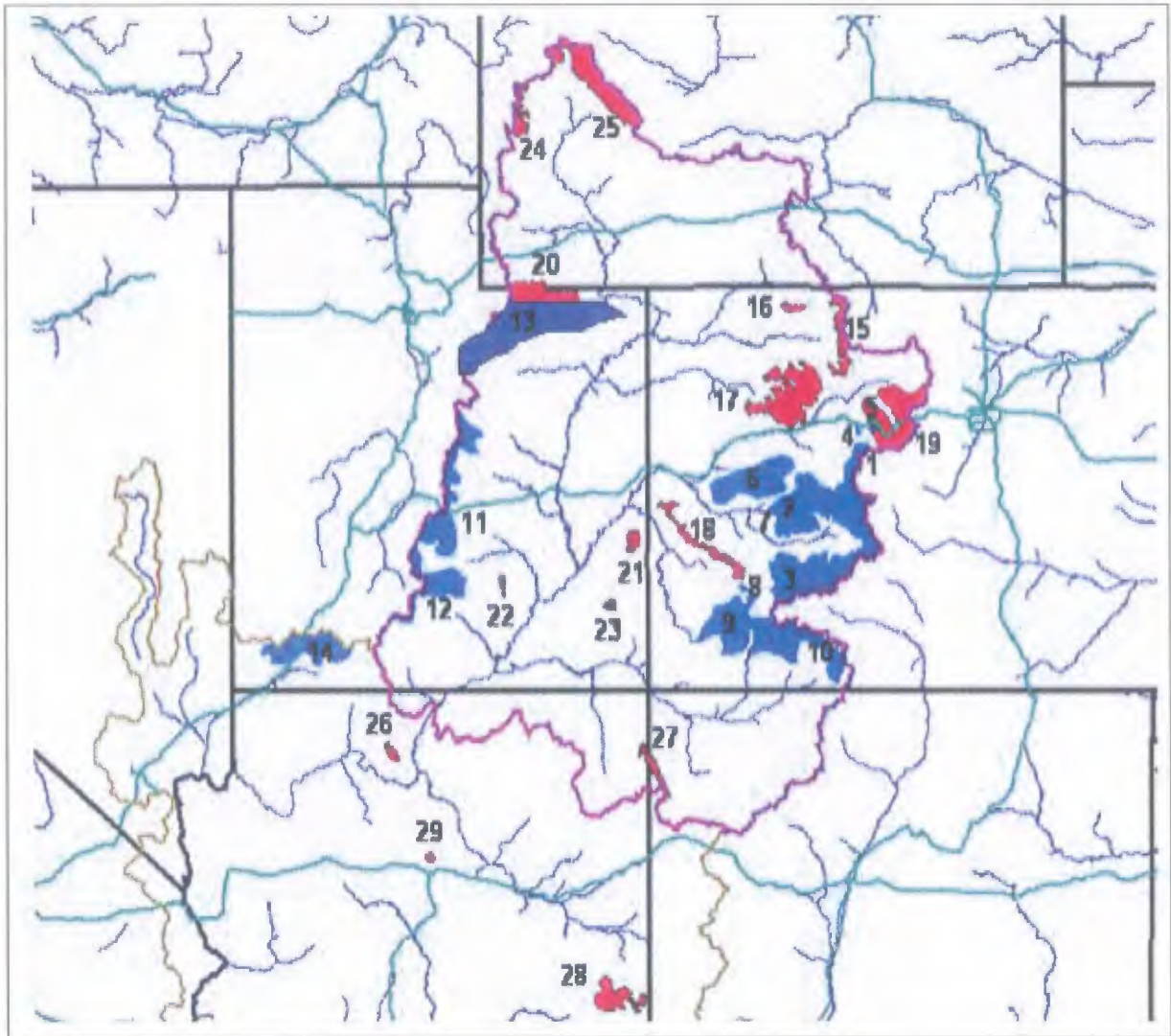


Figure 3. Operational and Potential Cloud Seeding Target Areas - Colorado River Basin



**Figure 4. Manually Operated Cloud Seeding Generator and Propane Tank**

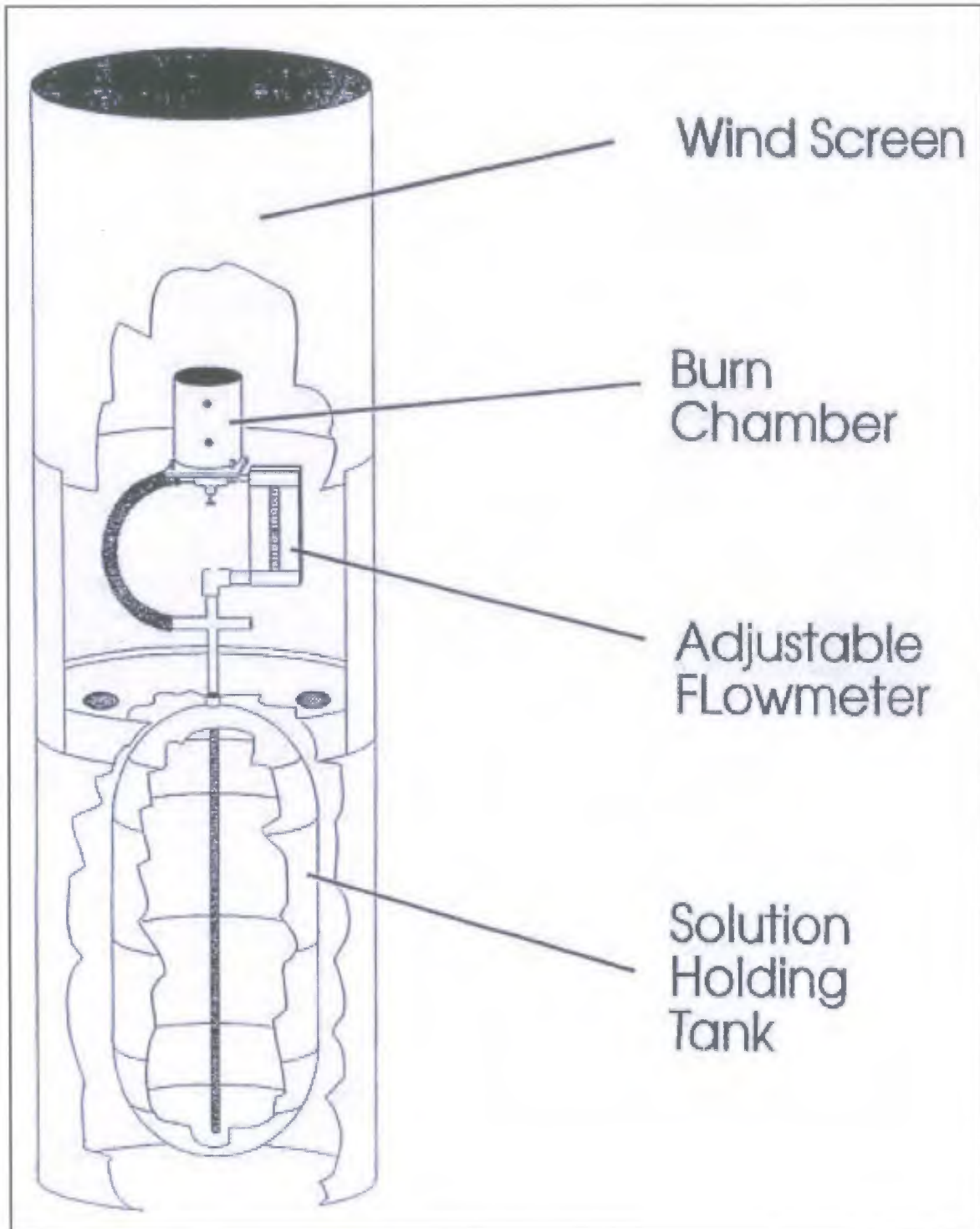


Figure 5. Cut-away View of Manually Operated Cloud Seeding Generator





Figure 6. Remotely Operated Silver Iodide Flare Dispenser with Spark Arrestors





**Figure 7. Silver Iodide Flares without Spark Arrestors**

## 2.0 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

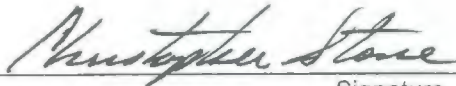
The environmental factors checked below would be potentially affected by this Project as indicated by the checklist on the following pages.

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> Aesthetics                      | <input type="checkbox"/> Agriculture Resources                         | <input type="checkbox"/> Air Quality               |
| <input checked="" type="checkbox"/> Biological Resources | <input type="checkbox"/> Cultural Resources                            | <input checked="" type="checkbox"/> Geology/Soils  |
| <input type="checkbox"/> Hazards and Hazardous Materials | <input checked="" type="checkbox"/> Hydrology/Water Quality            | <input type="checkbox"/> Land Use/Planning         |
| <input type="checkbox"/> Mineral Resources               | <input type="checkbox"/> Noise   | <input type="checkbox"/> Population/Housing        |
| <input type="checkbox"/> Public Services                 | <input type="checkbox"/> Recreation                                    | <input checked="" type="checkbox"/> Transportation |
| <input type="checkbox"/> Utilities/Service Systems       | <input checked="" type="checkbox"/> Mandatory Findings of Significance |  |

### 3.0 DETERMINATION

On the basis of this initial evaluation:

- ☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- ☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.



Signature

11-04-09

Date

**Christopher Stone**

**Assistant Deputy Director, Water Resources Division  
Los Angeles County Department of Public Works**

## 4.0 EVALUATION OF ENVIRONMENTAL IMPACTS

Environmental Factors	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>4.1 AESTHETICS</b>				
-- Would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a) Discussion of Effects: There are no scenic vistas within or adjacent to the 15 project sites. Therefore, no adverse direct or indirect impacts are anticipated in relation to the project. There are no direct, indirect, or cumulative impacts.

Mitigation: None required.

- b) Discussion of Effects: The project sites are not adjacent to streets that are designated by the State of California Department of Transportation as a scenic highway ([www.dot.ca.gov](http://www.dot.ca.gov)). In addition, there are no historic buildings or any scenic resources identified on the project sites. Therefore, no adverse direct or indirect impacts are anticipated. There are no direct, indirect, or cumulative impacts.

Mitigation: None required.

- c) Discussion of Effects: The majority of the cloud seeding stations will be manually operated, and are approximately 36 inches by 12 inches in diameter. Remotely operated stations will be installed horizontally and be approximately 48 inches tall and approximately 24 inches in diameter. An antenna mast, which reaches 7 feet, will be used for remote equipment. All stations will be located at debris basins owned by the County of Los Angeles. These basins are large depressions in the landscape and can be hundreds of feet wide and/or long. A cloud seeding station situated at one of these basins would be small in comparison to the existing structures and facilities located nearby, and therefore would not degrade the existing visual character of the site or quality of the site and its surroundings. Although the sites will be located in watersheds with existing vegetation and wildlife, views from residences located adjacent to the debris basins would not be impacted by the project due



to the project's size in relation to the setting. Therefore, there are no direct, indirect, or cumulative impacts.

Mitigation: None required.

- d) Discussion of Effects: Some new lighting would be introduced to the site from a small shielded flame with the development of the project. The manual generators have a wind screen which partially blocks out this light. The flame associated with the manual units is not visible during the daytime. The flares emit very little light as they burn in place. This light is partially shielded by the spark arrestors that surround each flare.

Several of the manual sites are in remote areas with no near-by residences. The specific locations of the other manual sites will consider this light factor in order to minimize visibility by surrounding residences. In addition, remote flare sites will be surrounded by chain-link fencing with inserted slats to further screen the flare light from viewers. Due to the design features described above, no direct or indirect impacts are anticipated. There are no direct, indirect, or cumulative impacts.

Mitigation: None required.

#### 4.2 AGRICULTURE RESOURCES

-- In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a) Discussion of Effects: The CNG sites are to be located within debris basins and other flood control facilities with no agricultural uses, nor are they designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. As a result, no adverse direct or indirect impacts are anticipated. There are no direct, indirect, or cumulative impacts

Mitigation: None required.

- b) Discussion of Effects: Construction and operation of the project will not adversely impact or conflict with any existing land that is zoned or designated for agriculture. All 15 project sites are located on existing LACDPW flood control facilities and all project features are consistent with the existing uses at each site. Furthermore, there are no Williamson Act contracts in effect on any of the subject sites. Therefore, no direct or indirect impacts to agricultural uses are anticipated, nor would there be any conflict with existing zoning or Williamson Act contracts. There are no direct, indirect, or cumulative impacts

Mitigation: None required.

- c) Discussion of Effects: The project sites are not zoned, designated, or utilized for agricultural use. As such, there is no potential for direct conversion of any farmland. Project operations will not affect the current land use on any parcel within or outside of the target area. The project is consistent with applicable land use plans and the development standards. There are no direct, indirect, or cumulative impacts.

Mitigation: None required.

#### 4.3 AIR QUALITY

-- Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a) Discussion of Effects: The emissions from the seeding devices have less than significant impact. These emissions are discussed under 3b and 3c. The Appendix A emissions model results show compliance with the South Coast Air Quality Management District's Final 2007 Air Quality Management Plan

Mitigation: None required.

- b) Discussion of Effects: As discussed in the project description, two types of seeding agent dispersal methods will be employed: manually operated cloud nuclei generators (CNG's) and remotely controlled flare units.

The CNGs will be constructed of stainless steel. The manually operated devices will be approximately 12 inches in diameter and three feet tall. Each CNG will be connected to a large-capacity propane tank (250-500 gal) supplied by a third-party propane company. Propane tanks will be located 15 to 20 ft away from the CNGs. The CNGs operate by burning a solution of approximately 96% acetone ( $\text{CH}_3\text{COCH}_3$ ), 3% silver iodide (AgI), and 1.0% sodium iodide (NaI). The AgI acts as the ice nuclei on which ice crystals form, and the sodium iodide acts as a catalyst to dissolve the AgI in acetone. Each manually operated CNG holds approximately 8 gal of acetone/AgI solution. The solution burns at a rate of 0.24 gal/hr, and the AgI in solution burns at 24 grams/hr. Propane is burned at a rate of approximately 0.75 gallons per hour. This combustion process produces microscopic silver iodide crystals. Combustion of acetone only produces carbon dioxide and water ( $\text{C}_3\text{H}_6\text{O(l)} + 4\text{O}_2\text{(g)} \rightarrow 3\text{CO}_2\text{(g)} + 3\text{H}_2\text{O(g)}$ ). Combustion of propane also produces carbon dioxide and water ( $\text{C}_3\text{H}_8 + (5)\text{O}_2 \rightarrow (3)\text{CO}_2 + (4)\text{H}_2\text{O}$ ).

The flare consists of 150 grams of glaciogenic pyrotechnic composition glued into a phenolic paper tube with the igniter held into the end and sealed with a plastic cap. The electronic



igniter is activated using the voltage supplied from the ground unit to the firing box. When activated, the flare burns in place for between 3.5 and 4 minutes. The flare contains ammonium perchlorate, zinc powder, aluminum powder, silver iodide, copper iodide and ammonium iodide. None of these chemicals are listed as hazardous materials by the U.S. Environmental Protection Agency (USEPA). Burning a seeding flare releases approximately 15 grams of microscopic silver-copper iodide particles.

Silver iodide is the most common seeding agent used for winter orographic cloud seeding programs. The potential environmental impacts of silver iodide have been studied extensively. Klein (1978) in a book entitled "Environmental Impacts of Artificial Ice Nucleating Agents" concludes:

*"The major environmental concerns about nucleating agents (effects on plant growth, game animals, and fish, etc.) appear to represent negligible environmental hazards. The more subtle potential effects of silver-based nucleating agents, such as their possible ability to potentiate the movement or effects of other materials of environmental concern, or to influence the activity of microorganisms in soils and aquatic environments after being bioconcentrated by plants, warrant continued research and monitoring. Effects, if they occur, are not expected to involve unacceptable risks. The long-term use of silver iodide and the confidence which the weather modification profession has in delivery systems and in the efficacy of this material, make it unlikely that other agents, with the exception of dry ice, will be used on a large scale, unless there are improvements in delivery systems and major changes in the economics of silver availability."*

In the same book a summary of potential impacts on humans is presented as follows:

*"The effects on humans of ingestion or topical contact with silver iodide used in cloud seeding can be considered negligible. Decade-long observations of cases (unrelated to cloud seeding) of ingestion of large silver doses revealed no physiological concern. In addition, surveys of seeding generator operators who have had long-term intensive contact with silver iodide reveal that they have not experienced medical difficulties."*

A report prepared by the Metropolitan Water District of Southern California (Ryan, 2005) contains the following summary on the topic of possible toxicity of silver iodide:

*"There has been a concern about the toxicity of the most common cloud seeding material, silver iodide (AgI) on the environment. The typical concentration of silver in rainwater or snow from a seeded cloud is less than 0.1 micrograms per liter. The Environmental Protection Agency recommends that the concentration of silver in drinking water not exceed 0.10 milligrams per liter of water. Many regions have much higher concentrations of silver in the soil than are found in seeded clouds. Industry emits 100 times as much silver into the atmosphere in many parts of the country, and silver from seeding is far exceeded by individual exposure from tooth fillings. The concentration of iodine in iodized salt used on food is far above the concentration found in rainwater from a seeded storm. No significant environmental effects have been noted around operational programs, many of which have been in operation for 30 to 40 years (WMA, 1996)".*

The concentration of silver in rainwater or snow from a seeded cloud using the above information is on the order of 1000 times less than the EPA Standard.

Also worth noting here is a statement by the Weather Modification Association in its formal policy statement (WMA 2005):

*"The potential environmental impacts of cloud seeding have been addressed in many studies. No significant adverse environmental impacts have been found due to use of silver iodide, the most commonly used seeding material, even in program areas where seeding has been conducted for fifty years or more".*

Specific to silver concentrations in snowmelt water, Marler (2007) reported on lake water and sediment studies conducted for two long-term seeding programs operated by the Pacific Gas and Electric Company (PG and E) in the Sierra Nevada of California. Samples from a number of surface sites were analyzed for their silver content. The program areas are subject to moderate seeding material releases over periods of nearly fifty years, with annual amounts varying from 9-90 pounds for the Mokelumne area and from 45-180 pounds for the Lake Almanor area.

The report presented the following characteristics regarding silver iodide and silver chloro-iodide compounds used in cloud seeding:

- *"Have extremely low solubility in water*
- *Remain solid particles in air, cloud, precipitation*
- *Do not ionize to produce Ag+ under ambient environmental conditions*
- *Are not very bio-available in the environment*
- *Background Ag concentrations in Sierra snow < 2.0 ppt (ppt= gAg/ml x 10<sup>-12</sup>)*
- *[Ag] in seeded snow typically range 40–60 ppt in layers sandwiched between unseeded snow.*
- *Total snowpack profile mean Ag concentrations average 5-20 ppt in highly effective seeding programs"*

Conclusions from the overall study include the following (from Marler, 2007):

- *"High resolution analysis of water, sediment and biological samples from areas subjected to long-term, 50 year+, cloud seeding programs, specifically PG and E's Mokelumne and Lake Almanor cloud seeding programs, support the following:*
- *The amount of silver iodide released to the atmosphere in cloud seeding is small, and even after many years of cloud seeding operations the resulting environmental concentrations are very small to non-detectable.*
- *Given the stability of silver iodide compounds, extreme insolubility of silver iodide in water and the absorptions of ionic silver by colloids found in the sediments and aquatic vegetation, silver concentrations in the Mokelumne and Lake Almanor Basin from cloud seeding are expected to be minimal.*
- *Since the monitored levels are low, usually below the detection limit in the target watershed, it is unlikely that continued cloud seeding operations would result in any significant increase in silver concentrations in the target watersheds.*
- *Silver concentrations were below regulatory standards. Therefore, continued operations should not result in any significant chronic effect to sensitive aquatic organisms.*
- *There is little to suggest the silver from cloud seeding gets into the system and bio-accumulates in organisms."*



### Global Climate Change

Global climate change is the occurrence of climate changes within the Earth's atmosphere due to the anthropogenic and non-anthropogenic increase of greenhouse gases (GHGs). The greenhouse effect describes the process by which GHGs collect in the upper atmosphere and create a barrier for harmful infrared radiation that inhibits the radiation from leaving the atmosphere. This process leads to increased levels of radiation and overall temperature on the Earth's surface. Los Angeles County has not adopted a threshold or any GHG standards which are binding on County projects of this nature.

"Greenhouse gas" or "greenhouse gases" includes, but is not limited to: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride (Reference: Health and Safety Code section 38505(g)). Estimates for total GHG emissions are expressed using CO<sub>2</sub> as a reference. This makes carbon dioxide important because other green house gases are compared to it using "carbon dioxide equivalents". "Carbon dioxide equivalent" means the amount of carbon dioxide by weight that would produce the same global warming impact as a given weight of another greenhouse gas, based on the best available science (Reference: Health and Safety Code section 38505(c)).

During the year 2007, approximately 7,282.4 million metric tons of CO<sub>2</sub> equivalents (MMTCO<sub>2</sub>e) were emitted within the United States (EIA, 2008) and approximately 451.5 MMTCO<sub>2</sub>e were emitted in the State of California (CalEPA, 2009 and EIA, 2008).

GHGs are defined within the Office of Planning and Research's (OPR) *Preliminary Draft CEQA Guideline Amendments for Greenhouse Gas Emissions* as:

*"all of the following gases: Carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. (Reference: Health and Safety Code section 38505(g))"*

The state of California has begun to make important legislative and legal precedence that will alter how air quality analysis is handled within the CEQA framework. On September 27, 2006, Governor Arnold Schwarzenegger signed AB 32, the California Global Warming Solutions Act of 2006. AB 32 outlined goals for the reduction of GHGs within California. The most important goal outlined within AB 32 is the reduction of statewide GHGs to 1990 levels by the year 2020. AB 32 further states that the California Air Resources Board (CARB) shall develop a scoping plan that details measures that will be utilized to gain the 2020 GHG reduction goal. The CARB is also charged within AB 32 to regulate large emitters of GHG (greater than 25,000 MTs per year).

Additionally, California Senate Bill 97 (SB 97) requires the Governor's Office of Planning and Research (OPR) to develop draft CEQA guidelines "for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions." OPR is required to "prepare, develop, and transmit" the guidelines to the Natural Resources Agency on or before July 1, 2009. The Natural Resources Agency must certify and adopt the guidelines on or before January 1, 2010.

As part of SB 97, changes will be made to Appendix G of the CEQA Guidelines. Specifically, a section addressing green house gases will be added including two questions which ask if the project will:

- a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
- b) Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

The above questions are from the Proposed CEQA Guidelines Amendment for Green House Gas Emissions dated January 8, 2009. It should be noted that the climate change analysis included in this MND complies with the suggested format proposed under SB97 even though it is not required.

#### PROJECT GHG EMISSIONS

Project construction and operations will result in very small emissions of CO<sub>2</sub> from the utilization of motor vehicles and other small-scale gas-powered construction equipment such as a jackhammer. These emissions will be very small and temporary in duration. Project construction will not involve any large construction equipment such as bulldozers, graders, or cranes and will not involve heavy construction activities such as grading, trenching, and demolition. Furthermore, construction activities will be limited to a few days at each site. No impacts are anticipated from construction emissions of CO<sub>2</sub> due to this small scale and limited duration.

Project operations associated with the manually operated CNG units include the combustion of propane and seeding solution, which is approximately 96% acetone. The combustion of both propane and acetone utilized within the manually operated CNG units will result in CO<sub>2</sub> emissions. However, the operational CO<sub>2</sub> emissions associated with the combustion of propane and the seeding solution will have no impact due to the limited duration of actual operations and the small amounts of fuel being consumed. The combustion of propane and seeding solution does not result in the emission of any other GHGs. The remote flare units do not emit any GHGs.

#### PROJECT GHG EMISSION CALCULATIONS AND QUANTITATIVE THRESHOLDS

The CNG units burn approximately 0.75 gallons of propane per hour during active operation (cloud seeding). Assuming 8 hours of operation per storm event and 8 storm events per year, an estimated 48 gallons of propane would be consumed at each manual CNG site per year. As stated in Section 1.8, six sites will initially be utilized to house manual CNG units. Therefore, during the first year of operation (with the above assumptions) a total of 288 gallons of propane would be consumed. Propane combustion CO<sub>2</sub> emissions per gallon are approximately 5.73 kilograms (kg). This calculation results in an estimated 1,651 kg (1.651 metric tons [MT]) of CO<sub>2</sub> emitted during the first year of operation from propane combustion. This represents  $0.366 \times 10^{-7}$  percent of California 2007 GHG emission levels, (CalEPA, 2009 and EIA, 2008). Stated another way, the project will emit 0.366 millionth of 1 percent of the total GHG generated by California in 2007.

Currently, no thresholds for GHGs have been formally established at the Federal, State, or local level. However, both the California Air Resources Board (CARB) and the South Coast Air Quality Management District (AQMD) have published draft qualitative and quantitative



CEQA thresholds of significance for GHG emissions. The California Air Pollution Control Officers Associated (CAPCOA) prepared a report (White Paper) in 2007 outlining suggested GHG thresholds, analysis tools, and levels of significance for CEQA analysis. Many of these draft thresholds are, at this point, potential long term significance thresholds (such as area-specific or market/project type driven thresholds) that cannot yet be properly applied for impact assessment. The CAPCOA White Paper discusses the use of quantitative thresholds similar to those drafted by the CARB and AQMD. The quantitative draft thresholds discussed within the CAPCOA White Paper range from 900 to 25,000 MTs of CO<sub>2</sub> equivalent per year.

The CARB draft thresholds do not include a quantitative draft threshold for non-industrial projects. For the purposes of this analysis, the project will be considered an industrial project so that the draft CARB CO<sub>2</sub> emissions threshold can be used within this analysis. The draft industrial thresholds can be applied because the introduction of silver iodide into the atmosphere for rain making purposes is a unique industrial process which provides goods (i.e. drinking water) to the public. The relevant CARB draft quantitative threshold for CO<sub>2</sub> emissions is 7,000 MTs of CO<sub>2</sub> per year for industrial projects (CARB, 2008). The estimated 1.651 metric tons represents approximately only 0.024 percent of this draft threshold. It is important to note that the CARB industrial sector CO<sub>2</sub> draft threshold was developed specifically for application to industrial projects that involve the combustion of fossil fuels. The CARB further states that combustion of fossil fuels represents approximately 63 percent of industrial GHG emissions statewide (CARB, 2008).

The AQMD included draft thresholds for industrial and commercial/residential projects. The AQMD draft industrial project threshold is 10,000 MTs of CO<sub>2</sub> per year. The estimated project CO<sub>2</sub> emissions from propane combustion for the first year would represent approximately only 0.016 percent of this draft threshold. Furthermore, even if the more stringent commercial/residential draft threshold (3,000 metric tons of CO<sub>2</sub> per year) was used for comparison, the estimated project propane combustion emissions would only reach 0.055 percent of the draft threshold.

Finally, the estimated CO<sub>2</sub> emissions from propane combustion could be increased to reflect the assumption that all 5 future sites were utilized to house manual CNG units (note that this assumption is only to show emissions for a future worst case scenario). This assumption allows for the projection of CO<sub>2</sub> emissions for a "worst case" future project year at full build out. With 11 sites utilizing manual CNGs, CO<sub>2</sub> emissions per year (with the above stated assumptions) would increase to 3.027 MTs. Furthermore, if it is assumed that the CO<sub>2</sub> emissions from combustion of the seeding solution would be equal to the CO<sub>2</sub> emissions from propane combustion of 1.651 MTs for year one and 3.027 MTs for the future worst case scenario year then the project operational CO<sub>2</sub> emissions per year would be equal to 3.302 MTs for year one and 6.054 MTs for the worst case future year. It is important to note that the actual CO<sub>2</sub> emission from combustion of seeding solution would in reality be much less than the CO<sub>2</sub> emissions from propane combustion because the volume of seeding solution combusted would be far less than the volume of propane combusted. These estimates of 3.027 MTs CO<sub>2</sub> per year (year one) and 6.054 MTs CO<sub>2</sub> per year (worst case future year) would only account for approximately 0.047 percent and 0.086 percent of the draft CARB threshold, respectively. With respect to the draft AQMD industrial project threshold (10,000 MTs per year), the estimates of 3.027 MTs (year one) and 6.054 MTs (worst case future year) would only account for 0.033 percent and 0.061 percent of the AQMD draft threshold, respectively. In summary, project emissions of GHGs, while quantifiable, are significantly less than all available draft non-zero thresholds. Thus, project GHG emissions are considered less than significant and no mitigation is required.

Mitigation: None required.

#### POTENTIAL CUMULATIVE IMPACT OF GHG EMISSIONS

GHG emission are considered mainly a cumulative impact under CEQA due to the fact almost no project is large enough to solely emit enough GHGs to create a discernable direct impact to the environment. Therefore, draft thresholds of significance detailed within the previous section should take potential cumulative impacts into account. It should be noted that Los Angeles County has not adopted a threshold or any GHG standards which are binding on County projects of this nature.

Under California Code of Regulations, Section 15064, Subsection h, Part 4:

"The mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulatively considerable."

Thus, the occurrence of global climate change due to the accumulation of GHG in the atmosphere due to other projects alone cannot demonstrate that the cloud seeding project will have a significant cumulative GHG impact. According to California Code of Regulations, Section 15064, Subsection h, Part 3:

"A lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program which provides specific requirements that will avoid or substantially lessen the cumulative problem (e.g. water quality control plan, air quality plan, integrated waste management plan) within the geographic area in which the project is located."

Project GHG emissions are found to be well below potential levels of significance when quantitative thresholds are utilized, such as the CARB and AQMD draft thresholds. The project's incremental contribution to the cumulative effects of GHGs is not considered cumulatively considerable because the emissions levels are well below draft threshold standards which are part of GHG mitigation legislation. Therefore, utilization of potential quantitative significance draft thresholds for GHG emissions dictates that cumulative impacts due to emissions of CO<sub>2</sub> from project operations should be considered insignificant.

Furthermore, project features facilitate the reduction of potential GHG emissions. The use of modern remotely operated cloud seeding equipment would provide on- and off-site cumulative impact mitigation through GHG reduction. Modern remote CNG units do not emit any GHGs. The project is reducing potential GHG emissions from the amount that would be emitted if only manual units were utilized by introducing state-of-the-art cloud seeding technology which does not emit green house gases. This use of cutting edge technology to reduce green house gases complies with Los Angeles County's Energy and Environmental Policy. The Energy and Environmental Policy provides guidelines for development and enhancement of energy conservation and environmental programs within County departments while conducting operations. By using the new technology, the County is demonstrating its environmental stewardship by reducing its "environmental footprint." An organization's environmental footprint is determined by the quantifiable impact of operations in terms of resource consumption, waste generation, and generation of pollutants



(Countywide Energy and Environmental Policy, 2007). The cumulative green house gas impact is mitigated within the project by:

- 1) Utilizing 4 state-of-the-art remotely controlled cloud seeding units. The manual CNG units are far easier and less expensive to utilize for weather modification projects. By utilizing 4 remote units for the project's first year, as stipulated within the project Scope of Work, potential GHG emissions are reduced by 40 percent.
- 2) Utilization of propane fuel within the manual units further reduces potential GHG emissions due to the relatively low GHG emissions generated from propane combustion when compared with the combustion of other fuels, such as ethanol, for cloud seeding purposes.

Therefore, utilization of the draft non zero threshold to determine the potential cumulative significance of project operational GHG emissions also leads to the conclusion that project operational GHG emissions are less than significant and no mitigation is required.

Mitigation: None required.

- c) Discussion of Effects: The only criteria pollutant released from either generation method would be particulate matter in the 2.5 to 10 micron size ranges. NAWC retained Meteorological Solutions, Inc. of Salt Lake City, Utah to perform calculations of particulate matter concentrations that would result from each seeding method (generator or flare). These calculations were based upon the maximum amounts of seeding material that would be released from a single seeding site on a 24-hour basis and converting the entire mass of the seeding material into 2.5-micron particles (representing the worst case scenario). The maximum concentrations predicted by the model at a fence line location (assumed to be 100 feet from the release point) were less than the 24-hour standard of  $35\mu\text{g}/\text{m}^3$ . The nearest fence line is a common feature used in modeling air quality impacts. It represents the closest location to which the predicted pollutant levels would impact someone in the near vicinity of the equipment. The closest residences are approximately 300 feet from the proposed release point.

Details regarding this modeling work are provided in Appendix A. Appendix B provides a calculation of the amount of heat produced by a single unit operating for one hour (89,590 Btu's).

Based on the CNG installation described in the Program Report (Griffith, 2009), a single vehicle is anticipated to be used for project installation and operation purposes. Installation would take 1 day per site. During storm season (October 15<sup>th</sup> through April 15<sup>th</sup>), LACDPW Flood Maintenance Division personnel patrol the debris basins on a daily basis. At the reservoirs, dam tenders monitor the facility continuously. Thus the installation and operation of equipment will not result in a direct, indirect or cumulatively considerable net increase of any criteria pollutant and will have no impact.

Mitigation: None required.

- d) Discussion of Effects: As discussed in 3b, there would not be any substantial pollutants emitted using either seeding method, therefore, there is no direct, indirect or cumulative impact.

Mitigation: None required.



- e) Discussion of Effects: No objectionable odors will be produced using either seeding method. Therefore, no direct, indirect, or cumulatively significant impacts are anticipated.

Mitigation: None required.

#### 4.4 BIOLOGICAL RESOURCES

-- Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a) Discussion of Effects: The program region is within the boundaries for the San Fernando, Agua Dulce, Sunland, Acton, Condor Peak, Pacifico Mountain, Chilao Flat, Mount Wilson, Waterman Mountain, Azusa, Crystal Lake, Glendora, Mescal Creek, Mount San Antonio, and Mount Baldy 7.5-minute topographic quadrangles developed by the United States Geological Survey (USGS). The California Department of Fish and Game (CDFG), California Natural Diversity Data Base (CNDDB) RareFind2 data (2006) for these quadrangles, along with the biological study affiliated with the 1998 Los Angeles County Weather Modification CEQA Negative declaration, show the listed species found within the project region. There are 55 species of plants with Federal and State-listed status, and/or California Native Plant Society (CNPS) Listed status, 36 species of wildlife that are federally- or State-listed or have other special status, and four sensitive terrestrial natural communities

or habitat types that are reported from historical information for the two quadrangles as shown in Appendix C.

The project will not have an adverse impact on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service. Discussion of the plants and wildlife in the CNG locations and target watersheds, along with significance criteria and expected conditions, are provided below.

## **EXISTING CONDITIONS**

### Vegetation

Within the target area, low slopes near the base of the mountains support coastal sage scrub, a more open community generally characterized by species such as California Buckwheat, Coastal Sagebrush, White Sage, Black Sage, and Laurel Sumac.

The predominant plant community in the watersheds is chaparral, a dense community typically composed of various evergreen shrubs including Chamise, California Lilac, Manzanita, Scrub Oak, Yerbasanta, and Mountain Mahogany. Several varieties of chaparral (dependent on species composition and density) occur in the watersheds. The most typical are Chamise Chaparral and Mixed Chaparral, as classified by USDA (1987), or Northern Mixed Chaparral, Chamise Chaparral, and *Ceanothus crassifolius* Chaparral, as classified by Holland (1986). Oak Woodlands occur near the canyon bottoms, and shaded canyon slopes contain a variety of oaks including Coast Live Oak, Scrub Oak, Canyon Live Oak, and Interior Live Oak. A variety of species from chaparral and coastal sage shrub typically comprises the understory. In mid- to high-elevation areas (4,000 to 6,000 ft) with northern exposures, Canyon Live Oak and Scrub Oak often associate with conifers such as Big-Cone Douglas Fir, Incense Cedar, and Coulter Pine. Low-elevation Coulter Pine and Big-Cone Douglas Fir stands are unique to southern California (USDA 1987). Additional tree species typical of high-elevation coniferous forests in the range include Ponderosa Pine, Jeffrey Pine, Sugar Pine, and White Fir. Common high-altitude understory species includes Bush Chinquapin, Green Manzanita, and Snow Bush. Riparian areas along the canyon bottoms commonly support tree species such as Western Sycamore, California Bay Laurel, Coast Live Oak, Arroyo Willow, and occasionally Fremont Cottonwood. Big-leaf Maples occur as riparian associates in mid- to high-elevation areas. Mulefat is a widespread willow-like shrub along drainages. A wide range of herbaceous species are typical of riparian/wetland habitats in the target area and commonly include rushes, sages, and several species of Monkey Flower.

### Wildlife

The targeted watersheds are part of the extensive undeveloped habitat areas in the San Gabriel Mountains. They support a wide variety of bird and mammalian species, including wide-ranging predators and species adapted to high-elevation forests. Common mammals include the Striped Skunk, Mule Deer, Gray Fox, Coyote, Bobcat, Mountain Lion, and several granivorous small mammals. Bird species typical of the chaparral community are the California Quail, Greater Roadrunner, Ash Throated Flycatcher, California Thrasher, Phainopepla, White-crowned Sparrow, and House Finch. The riparian areas provide nesting, roosting, and forage resources for Nuttall's Woodpecker, Black Phoebe, Warbling Vireo, Black-Headed Grosbeak, and Song Sparrow. Raptors, including Red-tailed Hawks, Great Horned Owls, and Turkey Vultures, hunt and forage over the entire watersheds. Dark-Eyed Juncos, Brown Creepers, and Blue-Gray Gnatcatchers are common in high-elevation



coniferous habitat, Amphibians are restricted in many of the canyons because of dry conditions, but the California Red Legged Frog and California Newt inhabit streams, ponds, and reservoirs. Reptiles are well represented and include the Southwestern Pond Turtle, Side-Blotched Lizard, Western Fence Lizard, Western Whiptail, Gopher Snake, and Western Pacific Rattlesnake.

#### Aquatic Resources

Aquatic habitats in the target areas include intermittent mountain streams, perennial streams and rivers, and five reservoirs (Pacoima, Big Tujunga, Cogswell, San Gabriel and Morris). A wide variety of aquatic organisms are present in the project area. Aquatic insects and the early stages of several terrestrial insects are found in both lake and stream habitats. These include Mayflies, Midges, Dragonflies, Damselflies, Water Striders, and beetles. Native fish species found in the San Gabriel River system include the Santa Ana Sucker, Arroyo Chub, and Santa Ana Speckled Dace. These fish are also considered likely to occur in Big Tujunga and Pacoima drainages. Warm water game fish, including Bluegill and Small Mouth Bass, have been introduced into the reservoirs. Rainbow Trout are stocked in the San Gabriel Reservoir and a population breeds naturally below the Cogswell Dam in the west fork of the San Gabriel River (SAIC 1993).

#### Threatened, Endangered, and Sensitive Species

Several threatened, endangered, and sensitive plant and animal species are known or considered to potentially occur in or near the targeted watersheds and the CNG site locations. These species, their distributions, and their sensitivity status according to the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Game's (CDFG's) California Natural Diversity Database (CNDDB) are listed in Appendix C.

#### Sensitive Plant Communities/Habitats

For this analysis, plant communities are considered sensitive if they are naturally limited in distribution, have been heavily impacted throughout their range, or provide important habitat (i.e., foraging, cover, migration corridors) for wildlife species. In the targeted watersheds, Coastal Sage Scrub, Oak Woodland, Riparian Woodland, Coniferous Forest, and Wetland are considered sensitive communities. Coastal Sage Scrub is one of the most heavily disturbed vegetation types in California; it is estimated that 36-85% of native stands have been destroyed (USDA 1987). Oak Woodland, Riparian Woodland, and Coniferous Forest provide high habitat values to a variety of wildlife species, including large mammals and predators. Wetlands are considered sensitive ecological resources for several reasons, including their value to wildlife and their history of human-caused degradation. Wetlands in the project area occur in the vicinity of springs and seeps along the margins of perennial and larger intermittent streams. There is no critical habitat for endangered species within the targeted watersheds (personal communication, July 31, 1998, with Bill Brown, Wildlife Biologist, ANF - TRC Mariah, 1998). Three terrestrial natural communities known or believed to be of high priority for inventory in the CNDDB occur in or near areas where CNGs would be located. These communities are:

- Southern Sycamore-Alder Riparian Woodland (Site No. 6 and Site No. 10);
- Riversidian Alluvial Fan Sage Scrub (Site No. 6);
- Southern Coast Live Oak Riparian Forest (Site No. 5); and
- Big Tujunga Creek and the San Gabriel River East Fork are recognized by the CNDDB as Southern California Arroyo Chub/Santa Ana Sucker stream communities. These

declining habitat communities are not presently protected under endangered species laws, but they are on a watch list.

## IMPACTS

### Significance Criteria

Impacts to biological resources would be considered significant if one or more of the following conditions occur:

- the project would result in substantial long-term loss of vegetation and of the overall capacity of the habitat to support native wildlife populations;
- the project would result in a net loss of riparian zone acreage or adversely affect Oak Woodlands, Coastal Sage Scrub, Coniferous Forest, or other plant communities considered to be rare, unique, or sensitive by federal, state, or local agencies;
- the project would adversely affect a threatened or endangered species or its critical or essential habitat (as designated by the federal *Endangered Species Act of 1973*, as amended, or the *California Endangered Species Act of 1984*); or
- the project would adversely affect wetlands, wilderness areas, research natural areas, designated natural areas, or other ecologically critical areas.

### Potential Impact - CNG Location Site

Because all CNGs would be located on previously graded sites, installation impacts would not be significant. Operation of the CNGs during seeding activities, occasional maintenance, and refilling of tanks may cause short-term avoidance of the sites by wildlife, but these impacts would not be significant. Coordination with the United States Forest and Wildlife Service and the California Department of Fish and Game determined that no threatened, endangered, or sensitive species would be affected by the installation of CNGs, due to their locations on previously graded sites (TRC Mariah, 1998).

### Potential Impact - CNG Target Site

The climatic effects of the project cannot be precisely determined because of the variability of success of cloud seeding operations. For average years, a 10-15% increase in annual precipitation is predicted, as well as a slight increase in snow pack and duration of snow cover in high-elevation areas. Because seeding would increase precipitation efficiency in average storms rather than create peak precipitation events, these changes in annual precipitation would be within the limits of natural variation for the target areas.

Analysis of impacts to biological systems from seeding operations is difficult and somewhat speculative, as any changes that may occur as a result of cloud seeding are expected to be gradual. Long-term changes within the watershed would be difficult to ascribe to weather modification activities. Over the long term, the project could slightly modify the climate in such a way as to cause minimal alterations in the distribution of plant communities and/or specific plant species, particularly those already occurring at or near their tolerance limit for moisture. For example, due to increased rainfall, coniferous forests might extend slightly down slope into areas now occupied by chaparral, or the distribution of species more adapted to xeric (dry) habitats could decline as these plants are replaced by more mesic (wetter habitat) species. The potential changes are expected to be minimal. However, plant distribution is determined by a variety of ecological factors including: average annual



precipitation, average temperature, soil type, and aspect. An important factor affecting the distribution of many sensitive species is the successional state of the plant community in which they occur (i.e., some are found only in early successional stages after disturbances). Plant species within the target areas have adapted to the wide variety of climatic and environmental conditions typical of the unpredictable Southern California climate. Significant impacts to vegetation caused by the project are therefore not anticipated. Ecologically valuable riparian and wetland areas within the watersheds may benefit from the additional moisture as these habitats are generally limited in Southern California due to lack of moisture. Because any potential changes in the structure or location of plant communities would be gradual and similar to natural cycles and succession, wildlife species would be only indirectly impacted since they would slowly relocate to appropriate foraging and nesting grounds as the plant communities around them changed. These impacts would be minimal.

In high-elevation areas, seeding activities are expected to slightly increase snow pack, causing snow to cover the ground later into the spring. This longer period of snow cover could shorten the growing season for alpine plants and potentially result in decreased biomass production. Delayed spring growth could have secondary effects on herbivores, whose available food supply would be slightly reduced early in the season. Plants and animals adapted to high altitudes in the target areas are accustomed to wide fluctuations in snow pack and duration of snow cover due to typical variations in Southern California weather patterns. No sensitive plant species inhabit the high mountain areas; none occur above 3,500 feet with most found below 2,000 feet (TRC-Weather Modification Program Negative Declaration, 1998). Impacts, therefore, are expected to be minimal. Potential high-elevation impacts might also be offset by the increased average annual precipitation that would encourage plant growth once the snow pack has melted. At middle and lower elevations where many annual plants die off during the summer months, increased precipitation during the spring may increase the period of time that soil moisture is available to support plant growth.

Agl, the seeding agent proposed for the project, is not expected to adversely affect vegetation in the target areas. In a review of existing data, Klein (1978) concluded that "available field and laboratory studies, using silver iodide at levels much higher than might be expected to occur as a result of weather modification, indicate that the accumulation of this type of nucleating agent in surface soil zones should have no discernable [sic] effects on plant growth or physiological processes."

Weaver and Super (1972) found no significant effects on plant growth or soil microorganism activity in soils enriched with 10, 100, and 1000 ppm AgI (simulating up to 1 million years of cloud seeding). They concluded that no silver damage would occur from cloud seeding programs lasting up to 100 years in duration. Weaver (1973, cited by Summers et al. 1983) also reported that it would be unlikely that silver effects would be detectable after 1,000 years of cloud seeding. Klein and Molise (1978) analyzed the potential for AgI accumulation in top soils to affect soil microbiological processes. They concluded that silver levels detected in soils from two weather modification programs were "at least 1-2 orders of magnitude below where possible changes in decomposer functions might be observed." They also noted that analyses of plants from some urban and forest areas have shown much higher concentrations of silver than plant material and soils occurring in areas undergoing weather modification.

A study reported by Klein (1978) found that AgI ingested with vegetation by herbivores did not affect the animals' digestive capabilities. Klein (1978) also stated that no medical difficulties have been reported by CNG operators who have had long-term intensive contact

with AgI. However, the effects of AgI on terrestrial animals are largely unknown because most studies have used "free" silver in high concentrations rather than AgI at levels likely to be encountered in cloud seeding applications. In humans and other vertebrates, the majority of silver is rapidly metabolized by the liver and excreted; it does not accumulate like lead or mercury (British Columbia Ministry of Environment, Lands and Parks 1996). Even the highly soluble form of silver is only moderately harmful to humans in relatively massive doses (HDR 1975).

Similarly, the iodine component of AgI is also unlikely to cause adverse impacts. According to Cooper and Jolly (1969, cited in Engineering-Science, Inc. 1992), a person would have to drink 130 gallons of rainwater from a seeded storm to ingest the same amount of iodine contained in a meal of eggs seasoned with iodized salt. Therefore, no adverse impacts to terrestrial animals are expected to result from the use of AgI in cloud seeding operations.

A recent study (Williams and Denholm, 2009) concerned with a winter research cloud seeding program in Australia concluded, "We consider the risk of an adverse ecotoxicological impact for this project to be negligibly small for the following reasons." Some of these reasons included:

- Although silver ions from soluble silver salts have been shown to be toxic to aquatic species, this is not the case for insoluble silver iodide.
- Where silver toxicity studies have been attempted using insoluble silver salts, researchers have had to resort to indirect methods to achieve the desired concentration of silver ion.
- The majority of studies into acute chronic effects of silver ion have used soluble silver nitrate.
- A number of studies have shown that the toxicity of silver ion in water is significantly ameliorated by the presence in water of chloride ion, carbonate ion, sulfide ion and dissolved organic carbon. In addition, silver is strongly absorbed onto particulate matter in water. Findings from recent studies point to the fact that silver ion concentrations in natural waters are negligibly small.

The project could directly or indirectly impact aquatic habitats. Increased precipitation and runoff could increase erosion and transportation of sediments into surface waters. Impacts on aquatic organism are not predicted to be significant because the increased turbidity and rate of deposition would be within the range of natural variability.

Storm precipitation resulting from seeding would introduce AgI into aquatic systems. Silver can be toxic to fish and anaerobic microorganisms. However, AgI's negligible dissociative tendencies and low solubility in water limit its availability to aquatic organisms. The AgI would be widely dispersed and diluted over target area watersheds. Any available silver in aquatic systems would be complexed by the Chloride ion ( $\text{Cl}^-$ ), dissolved organic carbon (DOC), and organic material and rendered unavailable (Janes and Playle 1995). Thus, the accumulation of silver in concentrations sufficient to cause toxicity is unlikely, and impacts of AgI on aquatic organisms are not expected to be significant.

Augmented runoff could affect aquatic biota by lengthening the time water is present in ephemeral and intermittent habitats and by prolonging higher flows in perennial streams. Biological productivity would be enhanced by the increased duration of water in temporary aquatic habitats. Prolonged higher flows in perennial streams could benefit aquatic species unless flows were high enough to flush organisms downstream.



Over time, however, these fluvial events could affect the habitat of streamside vegetation. Special attention must be paid to the Slender-horned Spine Flower, a state- and federally-listed endangered species that occurs in river wash areas. According to Scott Eliason, TIE Coordinator for the USFWS (personal communication, August 31, 1998), this plant inhabits old terraces above stream channels. Jigour and Avery (1997) describe the habitat of the Spineflower as "flood-deposited sandy terraces of floodplains and washes within the riversidian alluvial fan sage scrub natural community." In the target area for the Proposed Action, Big Tujunga Wash comprises one of the largest remaining stands of alluvial scrub habitat in Southern California and therefore provides essential habitat for the survival and recovery of the Slender-Horned Spineflower (USFWS, 1994).

Alluvial fan sage scrub is subject to, and dependent upon, periodic flooding and its resulting scour and deposition. These flood-related surface changes then influence the succession of plant and animal species in the community (Jigour and Avery 1997). The Spineflower is associated with intermediate and mature successional stage alluvial fan scrub which occupies older more stable flood terraces (USFWS, 1994).

Because cloud seeding would be suspended during peak storm events, the proposed action would not contribute to severe flooding. Any increase in stream flows would fall within the range of natural variability. Therefore, the project is not expected to adversely affect the habitat of this species.

The 15 project sites are located on previously graded areas with concrete/asphalt, and fenced access roads for each location. There will be no habitat modifications during project operations and no threatened, endangered, or sensitive species would be affected by the installation of CNGs due to their already developed locations. Hence, no substantial adverse effects are anticipated.

Less than significant impacts with mitigations incorporated are anticipated to any sensitive biological resources located within the project target area or location sites due to the incorporation of suspension criteria.

Mitigation: See Mitigation Measure WATER-1, Criteria 2.

- b) Discussion of Effects: The project will not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game, or the US Fish and Wildlife Service. The CNG's will be located on previously graded sites along the southern slopes of the San Gabriel Mountains. The proposed project sites currently consist exclusively of graded ground and dirt, concrete and/or asphalt areas, and paved (concrete or asphalt) access roads. Therefore, no direct impacts to riparian or other natural biological communities are anticipated to take place.

The targeted watersheds are located within the Angeles National Forest (ANF) and comprise a large portion of the southern slopes of the San Gabriel Mountains. Riparian areas along the canyon bottoms commonly support tree species such as Western Sycamore, California Bay Laurel, Coast Live Oak, Arroyo Willow, and occasionally Fremont Cottonwood. Big-Leaf Maples occur as riparian associates in mid- to high-elevation areas. Mulefat is a widespread willow-like shrub along drainages. A wide range of herbaceous species are typical of riparian/wetland habitats in the target area and commonly include rushes, sages, and several species of Monkey Flower. The riparian areas provide nesting,

roosting, and forage resources for Nuttall's Woodpecker, Black Phoebe, Warbling Vireo, Black-Headed Grosbeak, and Song Sparrow.

Ecologically valuable riparian and wetland areas within the watersheds may benefit from the additional moisture as these habitats are generally limited in Southern California due to lack of moisture. Because any potential changes in the structure or location of plant communities would be gradual and similar to natural cycles and succession, wildlife species would be only indirectly impacted since they would slowly relocate to appropriate foraging and nesting grounds as the plant communities around them changed. These impacts would be minimal (TRC Mariah, 1998). Therefore, no direct impacts are anticipated

Mitigation: None required.

- c) Discussion of Effects: The CNG's will be located on previously graded sites owned by the Los Angeles County Flood Control District within various cities and unincorporated county territory along the southern slopes of the San Gabriel Mountains. The proposed project sites consist exclusively of graded ground and dirt, concrete and/or asphalt areas, and concrete or asphalt access roads. Therefore, no direct impacts to riparian or other natural biological communities are anticipated to take place.

In the targeted watersheds, Coastal Sage Scrub, Oak Woodland, Riparian Woodland, Coniferous Forest, and Wetland are considered sensitive communities. Wetlands are considered sensitive ecological resources for several reasons, including their value to wildlife and their history of human-caused degradation. Wetlands in the project area occur in the vicinity of springs and seeps along the margins of perennial and larger intermittent streams. Ecologically valuable riparian and wetland areas within the watersheds may benefit from the additional moisture as these habitats are generally limited in Southern California due to lack of moisture (TRC Mariah, 1998). Therefore, no direct impacts are anticipated

Mitigation: None required.

- d) Discussion of Effects: The CNG's would be located on previously graded property owned by the Los Angeles County Flood Control District within various cities and unincorporated county territory along the southern slopes of the San Gabriel Mountains. The proposed project sites currently consist exclusively of graded ground and dirt, concrete and/or asphalt areas, and concrete or asphalt access roads. Therefore, no direct impacts to natural biological communities are anticipated to take place.

Aquatic habitats in the target areas include intermittent mountain streams, perennial streams and rivers, and five reservoirs (Pacoima, Big Tujunga, Cogswell, San Gabriel, and Morris). Native fish species found in the target area include the Santa Ana Sucker, Arroyo Chub, and Santa Ana Speckled Dace. These fish are considered likely to occur in the San Gabriel, Big Tujunga, and Pacoima drainages. Warm water game fish, including Bluegill and Small Mouth Bass, have been introduced into the reservoirs. Rainbow Trout are stocked in the San Gabriel Reservoir and a population breeds naturally below the Cogswell Dam in the west fork of the San Gabriel River (SAIC 1993). Augmented runoff could affect aquatic biota by lengthening the time water is present in ephemeral and intermittent habitats and by prolonging higher flows in perennial streams. Biological productivity would be enhanced by the increased duration of water in temporary aquatic habitats. Prolonged higher flows in perennial streams could benefit aquatic species (TRC Mariah, 1998). Therefore, no indirect adverse impacts are anticipated.

Due to the nature of weather modification projects, multiple projects are not conducted within overlapping target areas. Therefore, there is no potential for cumulative impacts associated with direct or indirect project impacts that will hinder wildlife movement.

Mitigation: None required.

- e) Discussion of Effects: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

The project will not conflict with any local policies or ordinances because the work will only take place in areas that have previously been graded and/or developed. As a result, there are no adverse direct, indirect, or cumulative impacts are anticipated.

Mitigation: None required.

- f) Discussion of Effects: Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

None of the 15 project sites is part of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP) or other approved habitat conservation plan. As a result, there are no adverse direct, indirect, or cumulative impacts.

Mitigation: None required.



#### 4.5 CULTURAL RESOURCES

-- Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a.) Discussion of Effects: The CNG's would be located on previously graded sites owned by the Los Angeles County Flood Control District within various cities and unincorporated county territory along the southern slopes of the San Gabriel Mountains. The proposed project sites currently are flood control and water conservation facilities which consist of graded dirt, large concrete and/or asphalt areas, and concrete or asphalt access roads. Access to the facility is controlled by chain link fencing and locked gates. The 36-inches of excavation needed to secure the remote flare CNGs in place will not exceed the depth of soil previously disturbed by grading and facility construction. Therefore, no direct or indirect impacts to historical resources are expected from installation, operation and maintenance of the project. Since there are no direct or indirect impacts, there are no cumulative impacts.

Mitigation: None required.

- b.) Discussion of Effects: No archaeological resources are in the project work areas because the sites have previously been graded and developed with concrete and/or asphalt for flood control and water conservation purposes. Equipment installation involves no excavation or very shallow excavation, less than 36-inches in depth. Therefore, no impacts to archaeological resources are anticipated within the project area.

No direct, indirect, or cumulative impacts are anticipated as a result of project operations either at project site locations or within target areas. Project operations will not involve any ground disturbance or similar activities that may lead to the substantial changes in the significance of an existing archaeological resource.

Mitigation: None required.

- c) Discussion of Effects: All CNGs will be located at sites previously graded for flood control and water conservation purposes. Excavation will be limited to a depth of 36 inches below grade, well above the strata in which paleontological resources or unique geological features are found. Therefore, resources will not be infringed upon if they exist. No unique geologic features are noted in the area. Project operations do not involve earth disturbing activities that may disturb existing paleontological resources. There are no adverse direct, indirect, or cumulative impacts.

Mitigation: None required.

- d) Discussion of Effects: The proposed project sites have already been graded and developed with the construction of the reservoirs, debris basins and sediment placement sites. It is unlikely that any religious or sacred sites exist within the project sites used for the CNGs. There is no evidence of human remains or known cemeteries at any of the locations. Project operations will not involve earth disturbing activities that may lead to the disturbance of any human remains. Therefore, there are no direct, indirect, or cumulative impacts.

Mitigation: None required.

#### 4.6 GEOLOGY AND SOILS

-- Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a) (i) Discussion of Effects: The land in Los Angeles County has more than 50 active and potentially active earthquake faults in the region. However, there are no active faults directly on the 15 sites and no Alquist-Priolo Earthquake Fault Zone Areas are within a 15-mile radius. Installation of the CNGs will not pose a geologic hazard since they will be staked and wired to the ground and securely fastened to existing facilities such as hand railings. Excavation for remotely operated CNGs would not exceed 36 inches. Therefore, fault rupture within the project area is unlikely. There is a less than significant direct, indirect, or cumulative impact for this project.



Mitigation: None required.

- (ii) Discussion of Effects: Southern California is a high-risk zone for seismic ground shaking. The San Andreas Fault is the closest fault, located close to the northeastern boundary of the San Gabriel watershed but not directly on the sites, and could cause strong ground shaking. Only the CNGs may be affected by earthquakes, possibly causing the equipment to topple. If toppling over of equipment occurs while the equipment is not operating, there will be no release of cloud seeding chemicals. The cloud seeding agent is kept in a sealed tank and is only pressurized during operations as shown in Figures 4 and 5. All activities would be in compliance with the Los Angeles County General Plan and other ordinances adopted by the County related to construction and safety. Therefore, only less than significant direct or indirect impacts are anticipated. Any project impacts associated with fault rupture will only result in localized effects. There is a less than significant direct, indirect, or cumulative impact for this project.

Mitigation: None Required.

- (iii) Discussion of Effects: The CNGs will be located on dams, debris basins, and a sediment placement site owned by the Los Angeles County Flood Control District along the southern slopes of the San Gabriel Mountains. By design, these dams and debris basins are strategically located at the mouth of canyons all along the San Gabriel Mountain Range in areas often prone to liquefaction. These large engineered structures are designed to withstand the hydrostatic forces associated with the retention and distribution of rainfall induced runoff. The proposed equipment is small and relatively light-weight and will be secured to a structure designed to safely withstand liquefaction. Therefore, there is a less than significant direct, indirect, or cumulative impact for this project.

Mitigation: None required.

- (iv) Discussion of Effects: Landslides often accompany earthquakes, floods, storm surges, hurricanes, wildfires, or volcanic activity (USGS Fact Sheet 2005-3156, 2005). The suspension criteria established for the cloud seeding program prevent potential landslides within the target areas by preventing initiation or halting cloud seeding operations when appropriate.

## EARTHQUAKES

CNG locations and target watersheds could be disturbed by an earthquake depending on the intensity and distance from the epicenter. During storm season, if a 5.0 (Richter Scale) earthquake occurs within 50 miles, or alternatively a 4.0 earthquake occurs within 25 miles of any CNG installation site or target watershed, cloud seeding operations will be suspended until an evaluation of the situation is completed. Manually operated cloud seeding equipment already in operation will be turned off within an hour. Remotely operated equipment will be turned off within 10 minutes. If these potential landslide conditions persist in the target areas, cloud seeding in the affected area may be suspended for the remainder of the storm season. LACDPW geology, geo-technical, and sedimentation personnel will analyze the impact on sediment transport and decide when cloud seeding may be resumed. With mitigation incorporated, a less than significant direct, indirect, or cumulative impact will occur on this item (refer to Mitigation Measure Water-1, Criteria 5).

## FLOODS

CNG locations and target watersheds could be affected by potential floods, possibly causing subsequent landslides during the storm season. Seeding will be suspended whenever the

NWS issues a flash flood warning affecting any of the target areas. Manually operated cloud seeding equipment already in operation will be turned off within an hour. Remotely operated equipment will be turned off within 10 minutes. Cloud seeding operations will be halted until the warning has expired. With mitigation incorporated, a less than significant direct, indirect, or cumulative impact will occur on this item (refer to Mitigation Measure Water-1, Criteria 3).

CNG locations and target watersheds could be affected by a design event, referred to as Capital Flood events. This is the design standard used to design debris basins within the County. A Capital Flood event, a 50-year rainfall event on a saturated watershed, produces different amounts of runoff depending on the region. This design rainfall event ranges from 9.0 inches in the valleys to 16.0 inches in the mountains over a 24-hour period (LACDPW, Hydrology Manual, 2006). In accordance with the suspension criteria, seeding will be suspended if any storm is forecast to produce over 5.0 inches of rainfall over a 24-hour period within any of the installation or target areas. The suspension criteria storm is 44% to 69% less rainfall than that associated with the defined Capital Flood for the region. Thus, with mitigation incorporated, a less than significant direct, indirect, or cumulative impact will occur on this (refer to Mitigation Measure Water-1, Criteria 2).

Similarly, flood control and water conservation facilities, such as the debris basins where the CNGs will be located, are generally designed to accommodate a Design Debris Event (DDE). A DDE is defined as the quantity of sediment produced by a saturated watershed significantly recovered from a burn (after four years) resulting from a 50-year, 24-hour rainfall. Since the suspension criteria storm is 44% to 69% less the 50-year rainfall, by which the flood control structures downstream were designed, a less than significant direct, indirect, or cumulative impact with mitigation is anticipated. Thus, with mitigation incorporated, a less than significant direct, indirect, or cumulative impact will occur on this (refer to Mitigation Measure Water-1, Criteria 2).

#### STORM SURGE, HURRICANE AND VOLCANIC ACTIVITY

Storm surge, hurricanes, and volcanic activity are not anticipated in the region, thus no impact is anticipated on these items.

#### WILDFIRES AND BURNED AREAS

CNG locations and target watersheds could be affected by wildfires which destroy existing vegetation and create burned areas. Recently burned regions are prone to landslides. In accordance with the project suspension criteria, areas that have been burned prior to, or during a storm season, will not be seeded for the remainder of the storm season for that year. The suspension will continue until sufficient natural re-vegetation occurs, thus a less than significant direct, indirect, or cumulative impact with mitigation in place is anticipated for this item.

To ensure that the project does not contribute to personal, property, or environmental injury, guidelines for suspension have been developed. Suspension of seeding could be necessary due to hazardous weather, lack of runoff storage capacity, precipitation related problems, or other special circumstances. In addition, to prevent undue erosion, slides, mud flows, and/or downstream flooding, seeding would be temporarily suspended over areas that have recently burned or exhibit unstable soils due to seismic events. As such, with mitigation incorporated, a less than significant direct, indirect, or cumulative impact will occur on this (refer to Mitigation Measure Water-1, Criteria 4).



Mitigation: The potential substantial adverse effects which will be mitigated by Mitigation Measure Water-1 are:

- Erosion caused by excessive storm runoff: Criteria 2 and 4
- Flooding caused by excessive storm runoff: Criteria 2 and 3
- Landslides caused by excessive storm runoff: Criteria 2 and 5

b) Discussion of Effects:

CNG locations and target watersheds could be disturbed by erosion depending on the design of the facility, the vegetative cover, and intensity of the storm event. Sediment production within a watershed is often referred to as erosion. Sediment production from a watershed is a function of several variables. The most evident of these include vegetative cover and rainfall intensity. Fire greatly increases the amount of runoff and erosion from a mountain watershed (LACDPW, Sedimentation Manual, 2006). Aspects of the cloud seeding program that pertain to erosion are discussed in the following:

#### VEGETATIVE COVER

The targeted watersheds are located within the Angeles National Forest (ANF) and comprise a large portion of the southern slopes of the San Gabriel Mountains. Riparian areas along the canyon bottoms commonly support tree species such as Western Sycamore, California Bay Laurel, Coast Live Oak, Arroyo Willow, and occasionally Fremont Cottonwood. Big-Leaf Maples occur as riparian associates in mid- to high-elevation areas. Mulefat is a widespread willow like shrub along drainages. A wide range of herbaceous species are typical of riparian/wetland habitats in the target area and commonly include rushes, sages, and several species of Monkey Flower. Ecologically valuable riparian and wetland areas within the watersheds may benefit from the additional moisture as these habitats are generally limited in Southern California due to lack of moisture (TRC Mariah, 1998). The increased rainfall in the region is anticipated to help the targeted watershed's vegetative growth, thus there are no direct, indirect, or cumulative impact for this item.

#### RAINFALL INTENSITY

CNG locations and target watersheds could be affected by high rainfall intensities. Intensity is the amount of rain per unit of time. The peak intensity produces the largest rainfall runoff rate. A Capital Flood event, which is runoff from the 50-year, 24-hour storm, could cause subsequent landslides due to high rainfall intensities. The peak intensity associated with a the Capital Flood ranges from 1.67 to 2.97 inches of rain within a 1-hour period from the foothills to the San Gabriel Mountains (LACDPW, Hydrology Manual, 2006). In accordance with the suspension criteria, seeding may be suspended if any storm is forecast to produce over 1 inch of rainfall within a 1-hour period within the target areas. The suspension criteria intensity is 40% to 66% less than the rainfall associated with the defined Capital Flood maximum intensity rate for the region. Thus, with mitigation incorporated, a less than significant direct, indirect, or cumulative impact will occur on this item (refer to Mitigation Measure Water-1, Criteria 2).

#### WILDFIRES AND BURNED AREA

CNG locations and target watersheds could be affected by wildfires which destroy existing vegetation and create burned areas. Recently burned areas are prone to erosion. In accordance with the suspension criteria, areas that have been burned prior to, or during a storm season, will not be seeded for the remainder of the storm season for that year. The suspension will continue until sufficient natural re-vegetation occurs, thus with mitigation

incorporated, a less than significant direct, indirect, or cumulative impact will occur on this item (refer to Mitigation Measure Water-1, Criteria 4).

#### DESIGN OF PROJECT SITES

Flood control and water conservation facilities, such as the debris basins where the CNGs will be located, are generally designed to accommodate a Design Debris Event (DDE). A DDE is defined as the quantity of sediment produced by a saturated watershed significantly recovered from a burn (after four years) as a result of a 50-year, 24-hour rainfall. Since the suspension criteria storm is 44% to 69% less than the 50-year storm, by which the flood control structures downstream were designed, a less than significant direct, indirect, or cumulative impact with mitigation in place is anticipated for this item (refer to Mitigation Measure Water-1, Criteria 2).

To ensure that the project would not contribute to personal, property, or environmental injury, guidelines for suspension have been developed. Suspension of seeding could be necessary due to hazardous weather, lack of runoff storage capacity, precipitation related problems, or other special circumstances. In addition, to prevent undue erosion, slides, mud flows, and/or downstream flooding, seeding would be temporarily suspended over areas that have recently burned, or exhibit unstable soils due to seismic events. With the utilization of the suspension criteria outlined within Mitigation Measure Water-1, Criteria Nos. 2 and 4, potential cumulative impacts associated with erosion shall also be avoided. As such, with mitigation incorporated, a less than significant direct, indirect, or cumulative impact will occur on this item (refer to Mitigation Measure Water-1, Criteria 2 and 4).

Mitigation: See Mitigation Measure WATER-1, Criteria Nos. 2 and 4.

- c) Discussion of Effects: As detailed within items a) and b), the project would not be located on a geologic unit or soil that is unstable, or that would become unstable due to the project. As previously discussed, the potential for landslide, lateral spreading, subsidence, liquefaction or collapse within the offsite target watershed is considered less than significant impact with suspension criteria mitigation in place .

Mitigation: See Mitigation Measure WATER-1, Criteria 2.

- d) Discussion of Effects: The 1994 Uniform Building Code Test Standard 18-1-B is a test that was developed in Orange County, California in the mid-1960s. It was introduced in the 1973 Uniform Building Code as UBC Test Standard 29-2. It was re-designated as UBC Test Standard 18-1 in the 1994 code. This standard was adopted by the American Society for Testing and Materials (ASTM) in 1988 and titled Soil Expansion Potential ASTM D-4829. Section 1803.2 of the 1994 Uniform Building Code directs expansive soil tendency be graded by this method. The UBC mandates that "special [foundation] design consideration" be employed if the Expansion Index is 20, or greater (Missouri University of Science and Technology, 2004).

The project sites, sitting at the foothills of the San Gabriel Mountains, are located on alluvial soil deposits. These soils are not considered to be expansive, and the proposed project will be located in areas that have previously been graded and re-compacted by construction of the existing debris basins and other facilities. No major ground disturbance would be required to install the CNGs, and any excavations, if required, will be shallow. Therefore, there are no adverse direct, indirect, or cumulative impacts for this item.

Mitigation: None required.

- e) Discussion of Effects: The project does not require the use of septic tanks or alternative wastewater disposal systems, nor will the project impact any existing septic tanks or alternative wastewater disposal systems on the project site or within the surrounding area. Therefore, there are no adverse direct, indirect, or cumulative impacts for this item.

Mitigation: None required.



#### 4.7 HAZARDS AND HAZARDOUS MATERIALS

-- Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



- a) Discussion of Effects: The project relies on the use of propane as an ignition source, which will be kept in a large capacity propane tank (250-500 gallons) supplied by a third-party propane company. The propane tanks have locking mechanisms to prevent tampering. Propane tanks will be located 15 to 20 feet away from the CNGs and would be refilled once or twice per storm season (October through May). Only manually generated CNGs will have propane tanks and only one tank will be placed at each manual site. Propane will be transported, stored, and utilized pursuant to all applicable federal, state, and local ordinances and design standards. Propane is widely used in a variety of applications for residential, commercial, and industrial use. The project will also use silver iodide as the seeding agent. Silver iodide will be stored either in a flare similar to the type used for emergency roadside flares, or in a solution chamber inside a manually operated CNG, which would be ignited using the propane tank as the fuel source. Remotely operated flares will be connected to one or two horizontal masts, each of which holding 10 to 20 flares. Flares will only be burned in place as a storm convection band passes over the sites. Flares will be replaced as necessary throughout the season. Manually operated CNGs burn solution at a rate of 0.24 gal/hr. This burn rate allows approximately 30 hours of operation before the CNG solution tank requires refilling. Silver iodide is commonly used in photography and as an antiseptic, and is not considered a hazardous material.

The seeding solution is comprised of approximately 96% acetone, which is considered a hazardous material under the California Hazardous Waste Control Law (HWCL), California Code of Regulations (CCR) Title 22, Chapter 11, Appendix X. Approximately 8 gallons of seeding solution is stored within a sealed tank inside each manually operated unit. Tanks are locked to prohibit tampering. The project sites are all located on private property controlled by the LACFCD. The properties are gated and locked. The acetone, as part of the seeding solution, is burned and released to the atmosphere in the form of combustion byproducts. Please refer to the Air Quality section of this document for an analysis of potential impacts relating to combustion emissions. The other components of the seeding solution, silver iodide and sodium iodide are not listed as hazardous chemicals by the EPA. The seeding solution shall not be disposed of by dumping, and transportation of the acetone used within the seeding solution shall be conducted in compliance with all applicable laws and regulations pertaining to hazardous materials. There will be no significant hazard to the public or the environment as a result of the use, disposal, or transport of acetone. Therefore, only less than significant impacts are anticipated. There are no direct, indirect, or cumulative impacts anticipated as a result of the use of the acetone-based seeding solution.

The cloud seeding flares proposed for this program are manufactured by Ice Crystal Engineering, Inc. of Davenport, North Dakota. The flare consists of 150 grams of glaciogenic pyrotechnic composition glued into a phenolic paper tube with the igniter held into the end and sealed with a plastic cap. The electronic igniter is activated using the voltage supplied from the ground unit to the firing box. When activated, the flare burns for 3.5 to 4 minutes. The flare contains Ammonium Perchlorate, Zinc Powder, Aluminum Powder, Silver Iodide, Copper Iodide and Ammonium Iodide. Burning a seeding flare releases approximately 15 grams of microscopic particles of silver-copper iodide. The flares will be burned within tubes designed to capture sparks and combustion related by-product. Combustion by-products will be disposed of in compliance with all applicable laws and regulations. There will be no direct, indirect, or cumulatively significant hazard to the public or the environment as a result of the use, disposal, or transport of the cloud seeding flares used for this project.

During storm season (October 15<sup>th</sup> through April 15<sup>th</sup>), LACDPW Flood Maintenance Division (FMD) personnel patrol the debris basins on a daily basis. At the reservoirs, dam

tenders monitor the facility continuously. These personnel will check the cloud seeding equipment for tampering or vandalism on a daily basis. Additionally, part-time technicians hired by the cloud seeding consultant will inspect, re-supply, and maintain the seeding equipment during the 2009-2010 storm season on an as needed basis. Generally, repair of malfunctioning equipment will occur within 24 hours. The project potential to create a direct, indirect, or cumulatively significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials is less than significant.

Mitigation: None required.

- b) Discussion of Effects: All sites depicted in Figure 2 are located on LACFCD property. All are fenced with controlled access using locked gates. No trespassing signs are present. These measures prohibit public access by potential hikers and prevent unauthorized entry into the areas used for flood control and water conservation purposes. In all cases, the manual generators will be secured in place by a chain attached to an existing facility or an "I-bolt" concreted in place. Propane and cloud seeding equipment tanks will be locked. This will mitigate tampering by unauthorized personnel. Additionally, a second chain link fence will be installed around the remote generator installations with slats inserted into the chain links.

During storm season (October 15<sup>th</sup> through April 15<sup>th</sup>), LACDPW Flood Maintenance Division (FMD) personnel patrol the debris basins on a daily basis. At the reservoirs, dam tenders monitor the facility continuously. These personnel will check the cloud seeding equipment for tampering or vandalism on a daily basis. Additionally, part-time technicians, hired by the cloud seeding consultant will inspect, re-supply, and maintain the seeding equipment during the 2009-2010 storm season on an as needed basis. Generally, repair of malfunctioning equipment will occur within 24 hours.

The LACDPW has a Hazard Communication Program (HCP) which assures that all chemicals are handled safely. The program requires that all hazardous materials be labeled and accompanied by Material Safety Data Sheets (MSDSs). In accordance with the LACDPW's HCP, all manually operated CNGs will be labeled for any hazardous chemicals and accompanied by an MSDS.

Additionally, the LACDPW has a Hazardous Waste Reporting Policy, which requires that a Hazardous Waste Report be generated whenever an accidental hazardous waste discharge is discovered. The report must be filed with the Executive Officer-Clerk of the County of Los Angeles Board of Supervisors Office and the Department of Health Services, Hazardous Material Control Program. The program requires filing of the report within 72 hours of when a "designated government employee" has knowledge of, or discovers, an illegal discharge of hazardous waste in the course of the employee's official duties. If Department personnel discover an accidental chemical spill pertaining to cloud seeding operations, a Hazardous Waste Report will be generated in accordance with Department Policy, and the consultant shall be immediately contacted for clean-up purposes. All chemical spills shall be contained by LACDPW personnel immediately upon discovery and shall be cleaned up by the contractor within 24-hours.

Propane will be stored in a 250-500 gallon, stainless steel, single-walled tank located 15 to 20 feet from the generator. Only one tank will be placed at each manually operated site. Propane tanks will comply with all applicable federal, state, and local standards, including earthquake protection. Propane is widely used in a variety of applications for residential, commercial, and industrial use. In the case of an accidental release or leak, propane will be quickly volatilized into the atmosphere as a gas. Project sites will be situated well away from



populated areas in debris basins of the County of Los Angeles. Silver iodide is not considered a hazardous material.

The seeding solution is comprised of mostly acetone (approximately 96%) and acetone is considered a hazardous material under the HWCL. Approximately 8 gallons of seeding solution is stored within each manually operated unit. The seeding solution is kept within the unit itself, as shown in Figures 4 and 5, and is well protected from direct physical harm. Extreme force would be required in order to rupture the seeding mixture tank. Considering the remote nature of the project sites, combined with the tamper resistant measures surrounding the flood control facilities, possible events that could rupture the seeding mixture tank are considered very unlikely.

Therefore, the hazard to the public or the environment, through reasonably foreseeable upset and/or accidental conditions, is less than significant.

Mitigation: None required.

- c) Discussion of Effects: There are no existing or proposed schools in direct proximity of the project sites. There is one high school within 0.25-mile of one of the project sites (Site # 13, Figure 2). However, the small quantities of acetone used and the isolated nature of the site dictate that the potential for harm as a result of the utilization of acetone is extremely remote. The school site is located within a quarter mile from the project site and the facility is gated and locked. The units themselves are also locked to prevent tampering. Therefore, there are no adverse direct, indirect, or cumulative impacts for this item.

Mitigation: None required.

- d) Discussion of Effects: The proposed project sites are not listed on ENVIROSTOR, the Department of Toxic Substances Control (DTSC) hazardous materials site database compiled pursuant to Government Code § 65962.5. Therefore, the project would not create a hazard to the public or environment and there are no direct, indirect, or cumulative impacts for this item.

Mitigation: None required.

- e) Discussion of Effects: The project sites are not located within airport land use plans and are not within 2 miles of public airports or public use airports. Therefore, there are no direct, indirect, or cumulative impacts.

Mitigation: None required.

- f) Discussion of Effects: The project sites are not located within the vicinity of private airstrips. Therefore, there are no direct, indirect, or cumulative impacts.

Mitigation: None required.

- g) Discussion of Effects: Project sites are situated well away from populated areas in debris basins of the County of Los Angeles. The sites are not within any emergency evacuation plan or adopted emergency evacuation plan route or corridor. The project will comply with the requirements of the County of Los Angeles Fire Department and all County requirements for fire and other emergency access. Because the project is required to

comply with all applicable County codes, any impacts will be reduced to levels below significance. There are no direct, indirect, or cumulative impacts.

Mitigation: None required.

- h) Discussion of Effects:** The project requires only minimal human involvement and will not increase any risk to life or property from wildland fires. Furthermore, the sites are not located in wildlands. Therefore, there are no direct, indirect, or cumulative impacts.

Mitigation: None required.

#### 4.8 HYDROLOGY AND WATER QUALITY

-- Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any other water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on-or off-site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on-or off-site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area, structures that would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j) Expose people or structures to inundation by seiche, tsunami or mud flow?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



- a) Discussion of Effects: The project does not pose a significant threat of creating discharge, wastewater, runoff, or stormwater flows that will violate any applicable water quality standards. Most runoff pollution occurs when discarded pollutants accumulate on impervious surfaces until they are dissolved by, or otherwise combined with, water flow to create polluted runoff. While the project is anticipated to increase precipitation 10 to 15 percent in any given season, and will therefore increase water flow, the project will not have any significant impact on potential pollutant sources. The worst water quality impacts due to runoff water generally occur during water flow events that are preceded by long dry periods with no precipitation. During these periods, pollutants accumulate to their highest levels on impervious surfaces until they are removed by the next rainfall event. The project will only increase flow volume and flow events, the characterization and concentration of available pollutants will not change. The impacts from polluted runoff may be reduced due to the increased flow volume acting to dilute the available pollutant sources during more frequent runoff events.

The project will result in very small levels of silver iodide reaching the surface waters during seeded precipitation events. Silver iodide is currently not listed as a 303(d) pollutant of concern by the Los Angeles regional Water Quality Control Board (LARWQCB, 2003). The levels of AgI that will be emitted by the project and remain in the environment are extremely small. Silver iodide is highly insoluble in water. Accumulations in the soil, vegetation, and surface runoff will not be measurable above natural background levels. The impacts to water quality are less than significant.

A recent study (Williams and Denholm, 2009) concerned with a winter research cloud seeding program in Australia considered the risk of an adverse ecotoxicological impact for this project to be negligibly small for the following reasons:

- Although silver ions from soluble silver salts have been shown to be toxic to aquatic species, this is not the case for insoluble silver iodide.
- Where silver toxicity studies have been attempted using insoluble silver salts, researchers have had to resort to indirect methods to achieve the desired concentration of silver ion.
- The majority of studies into acute chronic effects of silver ions have used soluble silver nitrate.
- A number of studies have shown that the toxicity of silver ions in water is significantly ameliorated by the presence in water of chloride ions, carbonate ions, sulfide ions and dissolved organic carbon. In addition, silver is strongly absorbed onto particulate matter in water. Findings from recent studies point to the fact that silver ion concentrations in natural waters are negligibly small.

The California Department of Water Resources summarized the findings of the USBR environmental documents and findings from other cloud seeding review studies (DWR, 2009). According to the USBR, the small amounts of silver iodide used in cloud seeding are minimal. They are often 100 times less than industry emissions into the atmosphere in many parts of the country. They are also lower than the exposure limits people get from tooth fillings. Watershed concentrations would be extremely low because only small amounts of seeding agent are used. Accumulations in the soil, vegetation, and surface runoff have not been large enough to measure above natural background levels. The DWR supports these findings and asserts that utilization of cloud seeding activities can be conducted without significant adverse impacts to the natural and human environment.

Therefore, project direct, indirect, or cumulative impacts to water quality or related to waste discharge are less than significant.



For additional details on silver iodide, refer to Section 4.3 Air Quality.

Mitigation: None required.

- b) Discussion of Effects: The project will result in a net increase in groundwater recharge through natural percolation as well as through the utilization of LACDPW recharge basins. Therefore, there are no adverse direct, indirect, or cumulative impacts are anticipated related to groundwater recharge or aquifer/water table level.

Mitigation: None required.

- c) Discussion of Effects: The project will not directly alter any water body. Physical alterations to each of the sites as a result of installation of equipment would be minimal and confined to already graded areas. Within the target area, the project will result in increased flow which will not affect water courses. Project suspension criteria will be followed to avoid seeding storm events that are forecast to produce 5-inches of rainfall within a 24-hour period. A 5-inch 24-hour storm is defined as a 2-5 year frequency event within the target areas (LACDPW, Hydrology Manual, 2006). A 2- to 5-year frequency storm is considered a threshold point where channel forming discharges occur within the existing streambeds. Storms below the threshold typically produce rainfall and accompanying runoff discharges that remain confined to established natural stream beds (Sedimentation Engineering, ASCE, 2007). Increased runoff will not create siltation problems. As such, with mitigation incorporated, a less than significant direct, indirect, or cumulative impact will occur on this item (refer to Mitigation Measure Water-1, Criteria 2).

Mitigation: The project suspension criteria shall be implemented as mitigation measures against potential impacts associated with the physical alteration of existing watercourses. Suspending project operations for events that are forecast to produce 5-inches (or greater) of rainfall within a 24-hour period will prevent excessive runoff from substantially altering the existing drainage pattern of the site or area. Refer to Mitigation Measure WATER-1 Criteria No. 2.

- d) Discussion of Effects: Installation of both the manually operated and remotely controlled CNGs at existing flood control and water conservation facilities will not alter the existing drainage pattern of the site or surrounding area. Thus, no significant direct, indirect, or cumulative impacts will occur to the existing drainage pattern of the site or surrounding area.

In the target area, the suspension criteria will mitigate potential flooding impacts to less than significant. The impacts include stream or river course alterations and substantially increasing the rate or amount of surface runoff in a manner which would result in flooding on- or off-site. Within the target area, a Capital Flood could cause subsequent flooding. A Capital Flood, based on a 50-year, 24-hour storm event, ranges from 9.0 to 16.0 inches of rain within a 24-hour period in the project areas (LACDPW, Hydrology Manual, 2006). In accordance with the project suspension criteria, seeding will be suspended if any storm is forecast to produce over 5.0 inches of rainfall within a 24-hour period within the project area. The suspension criteria are 44% to 69% less rainfall than a storm associated with the defined Capital Flood for the region. Thus, with mitigation incorporated, a less than significant direct, indirect, or cumulative impact will occur on this item (refer to Mitigation Measure Water-1, Criteria 2 ).

Similarly, flood control and water conservation facilities, such as the debris basins where the CNGs will be located, are located at the base of the mountains and are generally designed to accommodate a Design Debris Event (DDE). A DDE is defined as the quantity of

sediment produced by a saturated watershed significantly recovered from a burn (after four years) as a result of a 50-year, 24-hour rainfall event. Since the suspension criteria storm is 44% to 69% less the 50-year storm, by which the flood control structures downstream were designed, with mitigation incorporated, a less than significant direct, indirect, or cumulative impact will occur on this item (refer to Mitigation Measure Water-1, Criteria 2).

Higher rainfall intensity produces larger runoff rates. The 50-year, 24-hour rainfall event peak intensity ranges from 1.67 to 2.97 inches of rain within a 1-hour period from the valleys to the San Gabriel Mountain region respectively (LACDPW, Hydrology Manual, 2006). In accordance with the suspension criteria set up for the project, seeding may be suspended if any storm is forecast to produce over 1 inch of rainfall within a 1-hour period within any of the installation or target areas. The suspension criteria storm intensity is 40% to 66% below the defined 50-year, 24-hour rainfall, maximum intensity rate for the region. Thus, with mitigation incorporated, a less than significant direct, indirect, or cumulative impact will occur on this item (refer to Mitigation Measure Water-1, Criteria 2).

Mitigation: The project suspension criteria, as outlined within the Description of Project section of this document, shall be implemented herein as mitigation for potential impacts associated with increased flow velocities and volumes. Suspending project operations for events that are forecast to produce 5 inches (or greater) of rainfall within a 24-hour period, or over 1 inch of rainfall within a 1-hour period will prevent excessive runoff from flooding on- or off-site. With this mitigation incorporated, a less than significant direct, indirect, or cumulative impact will occur on this item. Refer to Mitigation Measure WATER-1, Criteria 2.

- e) Discussion of Effects: The CNG installation at existing flood control and water conservation sites will not result in creation or addition of any runoff. The minimal amount of earthwork involved with the installation of remote operated units will be disposed of immediately and, even if a precipitation event occurred during the installation process, the amount of soils disturbed would not create a significant impact on water quality. No other components of project construction have the potential to impact water quality, regardless of runoff potential.

Within the target area, the project will increase runoff and other surface water flow that will lead to increased utilization of stormwater drainage systems. However, project suspension criteria are lower than the design storm intensity and volume, which prevents stormwater flows from exceeding the existing downstream stormwater drainage systems capacities.

The process of suspending activities will involve continually monitoring criteria conditions described in Table 5. Once suspension criteria have been met, LACDPW's Storm Operations Director, in coordination with NAWC, would direct cloud seeding operations to halt. NAWC operational personnel will be able to turn on or off manually operated cloud seeding equipment within 1-hour. Remotely operated cloud seeding generators will be able to be halted within 10 minutes. LACDPW will consider all relevant circumstances prior to rendering decisions regarding restricting or suspending cloud seeding operations. Cloud seeding locations with rainfall less than the suspension criteria thresholds will continue to be operated until the targeted storm has passed

Seeding events will be utilized to increase precipitation during small to moderate storm systems that will not create enough stormwater flow to threaten existing drainage systems. Therefore, a less than significant impact will occur with respect to potential impact related to stormwater flows exceeding the existing stormwater drainage system capacity downstream.

The project will create up to a 15 percent estimated increase in precipitation within the target



area. This increase will in turn result in increased water flow within the target area. However, the project itself will not create, or contribute to, pollution sources that could combine with the increased water flow to create runoff water that violates existing water quality standards. Most runoff pollution occurs when discarded pollutants accumulate on impervious surfaces until they are dissolved by, or otherwise combined with, water flow to create polluted runoff. While the project is anticipated to increase precipitation up to 15 percent in any given season, and will therefore increase water flow, the project will not have any significant impact on potential pollutant sources. The worst water quality impacts due to runoff water generally occur during water flow events that are preceded by long dry periods with no precipitation. During these periods, pollutants accumulate to their highest levels on impervious surfaces until they are removed by the next water flow event. The project will only increase flow volume and flow events, the characterization and concentration of available pollutants will not change. If anything, impacts from polluted runoff may be reduced due to the increased flow volume acting to dilute the available pollutant sources during more frequent water flow events.

Burned regions offer one potential pollutant source that could combine with the increased flow to create runoff pollution within the target area. Burned areas produce large amounts of ash. Ash covered canyons can lead to high levels of turbidity within runoff waters. Impacts to runoff water quality due to turbidity will be minimized through implementation of the project's suspension criteria (refer to the Project Description and Table 5). Under the suspension criteria, seeding activities can be suspended over areas that have been impacted by fires or any other event that results in unstable surface soil conditions. Therefore with mitigation incorporated, a less than significant direct, indirect, or cumulative impact will occur on this item.

The project will not utilize delivery areas, loading docks, or any other areas where materials are stored, transferred, or utilized in a manner that would create the potential for introduction of pollutants to the environment. The project will not involve equipment or vehicles that will require on-site refueling other than the propane tanks. The propane tanks will be refueled by the licensed propane distributor, as needed, and the refueling process is not expected to contribute to any potential pollution source. The tanks and connections will be inspected by the NAWC technician each time the units are utilized and any required repairs will be conducted immediately. Therefore, project facilities will not directly, indirectly, or cumulatively impact water quality.

The project will not directly discharge any stormwater. However, it will create increased precipitation which will create more stormwater within the target area. The increased stormwater will not have any detrimental effect on future beneficial uses.

Mitigation: The project suspension criteria shall be implemented as mitigation to minimize the potential for impacts associated with the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. Suspending project operations for events that are forecast to produce 5-inches (or greater) of rainfall within a 24-hour period, or over 1 inch of rainfall within a 1-hour period, will prevent excessive storm runoff from exceeding downstream flood control facility capacities on- or off-site. Additionally, suspending cloud seeding operations in the event that reservoir storage is at a level where additional inflow to the reservoir from upcoming storms will result in water releases greater than the capacity of the downstream water conservation facilities will prevent excessive storm runoff from exceeding downstream facility capacities. The project will not add pollutants to the runoff water. Thus, with mitigation incorporated, a less

than significant direct, indirect, or cumulative impact will occur on this item (refer to Mitigation Measure Water-1, Criteria 1 and 2).

- f) Discussion of Effects: The project will not add to any pollution source, or potential pollution source, that will lead to any substantial degradation of water quality. Water quality concerns relating to runoff are further discussed in sub-section e) above. The project will not have direct, indirect, or cumulative pollution impacts.

Mitigation: None required.

- g) Discussion of Effects: The project does not involve the creation or construction of any structure that will involve human occupancy, including houses. Therefore, the project will not threaten human life due to the placement of housing within 100-year flood hazard area. Increases in runoff will be limited based on project suspension criteria that will prevent seeding in rain events much smaller than those that would create 100-year runoff. No direct, indirect, or cumulative impacts will occur due to cloud seeding.

Mitigation: None required.

- h) Discussion of Effects: The project does not include any structure that will divert or alter the current diversion pattern of stormwater flow. Therefore, no impacts will occur due to altered diversion of storm flow within 100-year flood hazard areas. No direct, indirect, or cumulative impacts will occur regarding this item.

Mitigation: None required.

- i) Discussion of Effects: The project will result in increased surface flow within the target area. However, risk from flooding events is not expected to create a potential significant impact due to implementation of project suspension criteria (refer to Mitigation measure Water-1, Criteria 2). One of the main objectives of the suspension criteria is to minimize the potential of cloud seeding activities to combine with naturally occurring precipitation or surface flow to create harmful flooding events. The suspension criteria specifically dictate seeding activity suspension when high levels of precipitation are predicted, where flood control measures are nearing their safe operating capacity. The criteria suspend operations where any other event or set of conditions exist that may combine with cloud seeding activities to create potentially unsafe conditions for human life, property, or the environment. Since the LACDPW manages flood control measures within the target area, the LACDPW representative will closely monitor and accurately evaluate the potential for flooding to occur, especially with respect to flood control capacity. With mitigation incorporated, a less than significant direct, indirect, or cumulative impact will occur on this item (refer to Mitigation Measure Water-1, Criteria 2 ).

Mitigation: The project suspension criteria shall be implemented as mitigation for potential impacts associated with loss of life or property due to flooding. With mitigation incorporated, a less than significant direct, indirect, or cumulative impact will occur on this item (refer to Mitigation Measure Water-1, Criteria 2).

- j) Discussion of Effects: The project will not expose people or property to threat from seiche or tsunami. Nor will the project increase the chances of seiche- or tsunami-related impacts.

Implementation of the project could affect impacts related to mud flows or other mass wasting events. Precipitation is one key factor leading to mass wasting events, and the



project will lead to an increase in precipitation by approximately 10 to 15 percent within the target area. Besides rainfall, other factors such as fire, large development projects, and other vegetation removal activities are considered key factors for mass wasting. The project will not create, increase, or otherwise affect any vegetation removing activity, whether planned (such as grading for future development) or accidental (such as fire).

The project could increase the chances of mud flows when other key factors are present. The project's suspension criteria include measures to suspend seeding where other potential key factors of mass wasting exist. For instance, cloud seeding will not take place where fires have removed the vegetation cover that protects topsoil (refer to Mitigation Measure Water-1, Criteria No. 4). Seeding could also be suspended where large development projects have created large areas of exposed soils that could create the potential of mass wasting.

Seeding will be suspended during naturally occurring high precipitation events. These suspension criteria eliminate the potential of creating mass wasting events caused solely or primarily from large amounts of precipitation. With mitigation incorporated, a less than significant direct, indirect, or cumulative impact will occur on this item (refer to Mitigation Measure Water-1, Criteria 2).

Mitigation: The project suspension criteria shall be implemented herein as mitigation for potential impacts associated with mud flows or other mass wasting event. With mitigation incorporated, a less than significant direct, indirect, or cumulative impact will occur on this item (refer to Mitigation Measure Water-1, Criteria Nos. 2 and 4).

#### 4.9 LAND USE AND PLANNING

-- Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a) Discussion of Effects: The project sites are located in flood control facility areas that are already developed, owned, and operated by the LACFCD. This project will not physically divide an established community or impede any surrounding operations. There are no direct, indirect, or cumulative impacts.

Mitigation: None required.

- b) Discussion of Effects: The project is consistent with all applicable land use designations, including those for the County of Los Angeles General Plan, and does not interfere with any policies for environmental protection since the project sites are located on previously graded locations. The project is considered to be an accessory land use to the existing land uses on each site. All 15 sites are currently occupied by flood control facilities including dams and debris basins. Because no CNGs would be located in wilderness areas and no prolonged changes in weather over wilderness areas would occur, the project is compatible with all land use designation and management policies. As such, there are no direct, indirect, or cumulative impacts.

Mitigation: None required.

- c) Discussion of Effects: The project does not conflict with any applicable habitat conservation plan or natural community conservation plan. Therefore, there are no direct, indirect, or cumulative impacts.

Mitigation: None required.



#### 4.10 MINERAL RESOURCES

-- Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a) Discussion of Effects: There are no known mineral resources at any of the project sites. Therefore, there are no direct, indirect, or cumulative impacts.

Mitigation: None required.

- b) Discussion of Effects: There are no known mineral resources at any of the project sites. Therefore, there are no direct, indirect, or cumulative impacts.

Mitigation: None required.

#### 4.11 NOISE

-- Would the project result in:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a) Discussion of Effects: Installation of the CNGs could slightly increase noise levels temporarily in the vicinity of the project sites. All construction activities would take place between the hours of 7 a.m. and 7 p.m. and would be minimal and limited to shallow excavation or rebar installation. Based on the CNG installation described in the Program Report (Griffith, 2009) and the small equipment involved, any noise increase would be intermittent and minor. Furthermore, since installation is expected to last a maximum of 2 days per site, noise increase would be limited to that period. The project will remain within established noise limits at each site. The project will not contribute to significant increases in traffic volumes at any time and will, therefore, not lead to significant levels of traffic-generated noise. Therefore, only less than significant direct, indirect, or cumulative impacts are anticipated.

Mitigation: None required.

- b) Discussion of Effects: Based on the CNG installation described in the Program Report (Griffith, 2009) and the small equipment involved, installation of the CNGs will not generate groundborne vibrations. Therefore, there are no direct, indirect, or cumulative impacts.

Mitigation: None required.

- c) Discussion of Effects: Operation of the project is not anticipated to increase the ambient noise levels above the levels existing without the project. Therefore, there are no direct, indirect, or cumulative impacts.

Mitigation: None required.

- d) Discussion of Effects: Installation activities would minimally impact ambient noise levels temporarily in the vicinity of the project sites. Normal activities associated with the project operations would not increase ambient noise levels. Therefore, there are less than significant direct, indirect, or cumulative impacts.

Mitigation: None required.

- e) Discussion of Effects: The project sites are not located within a 2-mile radius of a public airport or a public use airport, and there are no people residing or working in the project areas that will be exposed to excessive noise levels. Therefore, there are less than significant direct, indirect, or cumulative impacts.

Mitigation: None required.

- f) Discussion of Effects: None of the 15 project sites are located within the vicinity of a private airstrip. Therefore, there are no direct, indirect, or cumulative impacts.

Mitigation: None required.

#### 4.12 POPULATION AND HOUSING

-- Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a) Discussion of Effects: The project does not involve the creation of structures for human inhabitation. Therefore, there are no direct, indirect, or cumulative impacts.

Mitigation: None required.

- b) Discussion of Effects: The project sites are located on developed, uninhabited land used by the LACDPW as dam/debris basins. Therefore, there are no direct, indirect, or cumulative impacts.

Mitigation: None required.

- c) Discussion of Effects: The project involves the installation of CNGs in areas currently uninhabited. Therefore, there are no direct, indirect, or cumulative impacts.

Mitigation: None required.

#### 4.13 PUBLIC SERVICES

--Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i) Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
v) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a) (i) Discussion of Effects: The sites are in areas already served by the County of Los Angeles Fire Department. The project does not require the construction of any new governmental facilities or the alteration of any existing governmental facilities or cause a decline in the levels of service, which could cause the need to construct new facilities. There are no direct, indirect, or cumulative impacts.

Mitigation: None required.

- (ii) Discussion of Effects: The sites are in areas already served by the County of Los Angeles Sherriff's Department. The project would not require the construction of any new facilities or alteration to existing facilities or cause a decline in levels of service, which could cause the need to construct new facilities. There are no direct, indirect, or cumulative impacts.

Mitigation: None required.

- (iii) Discussion of Effects: No school fees would be levied as the project would not involve the construction of any occupied buildings. There are no direct, indirect, or cumulative impacts.

Mitigation: None required.

- (iv) Discussion of Effects: The project sites are located in developed areas, currently served by the County of Los Angeles. The project will not impact any parks or recreation areas. There are no direct, indirect, or cumulative impacts.

Mitigation: None required.

- (v) Discussion of Effects: The project sites are located in developed areas, currently served by the County of Los Angeles. The project will not require the construction of any new public facilities or alteration of any existing public facilities or cause a decline in the levels of service, which could cause the need to construct new facilities. There are no direct, indirect, or cumulative impacts.

Mitigation: None required.



#### 4.14 RECREATION

--Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a) Discussion of Effects: The project does not propose any new housing or large employment generator that would cause an increase in the use of neighborhood parks or other recreational facilities. There are no direct, indirect, or cumulative impacts.

Mitigation: None required.

- b) Discussion of Effects: The project does not propose any new housing or large employment generator that would require the construction or expansion of neighborhood parks or other recreational facilities. There are no direct, indirect, or cumulative impacts.

Mitigation: None required.

#### 4.15 TRANSPORTATION/TRAFFIC

-- Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Result in inadequate parking capacity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a) Discussion of Effects: There are existing fenced access roads to each project site that restrict public access to each of the debris basins. The project will create a negligible increase in vehicle trips per day during the installation and activation of the CNGs during rain events. Based on the CNG installation described in the Program Report (Griffith, 2009), a single vehicle is anticipated to be used for project installation and operation purposes. Each installation requires one trip, and operation at manual sites may require 15 trips per year. Fewer trips will be required for remotely operated sites. Therefore, there are less than significant direct, indirect, or cumulative impacts.

Mitigation: None required.

- b) Discussion of Effects: Traffic to the project sites will be negligible because vehicle trips will mainly occur during installation activities, servicing/maintenance trips in the winter, and rain events in order to activate the manually-operated CNGs. Based on the CNG installation described in the Program Report (Griffith, 2009), a single vehicle is anticipated to be used for project installation and operation purposes. Each installation requires one trip, and operation at manual sites may require 15 trips per year. Remotely-operated sites will not be visited during rain events. Therefore, there are no direct, indirect, or cumulative impact to the level of service standard established by the County.

Mitigation: None required.

- c) Discussion of Effects: The project would not create a substantial safety risk or interfere with air traffic patterns because the roads to the project sites already exist, and the number of vehicle trips would be minimal. There are no direct, indirect, or cumulative impacts.

Mitigation: None required.

- d) Discussion of Effects: The project will not substantially increase hazards due to a design feature or incompatible uses because road construction or relocation of existing stoplights will not be required. Each of the 15 sites has an existing locked access road and minimal traffic limited only to permitted access. Installation of the CNGs would not prevent or limit road access. There are no direct, indirect, or cumulative impacts.

Mitigation: None required.

- e) Discussion of Effects: The project sites are located in developed areas currently served by the County of Los Angeles Fire Department, Sheriff Department, and other local agencies. The project would not create inadequate emergency access. Project suspension criteria will be followed to avoid seeding storm events that are forecast to produce 5-inches (or greater) of rainfall within a 24-hour period. A 5-inch in 24-hour storm is defined as a 2-5 year frequency event within the target areas (LACDPW, Hydrology Manual, 2006). Storms which typically occur every 2-5 years do not result in inadequate emergency access. With mitigation incorporated, a less than significant direct, indirect, or cumulative impact will occur on this item (refer to Mitigation Measure Water-1, Criteria 2 and 6).

Mitigation: The project suspension criteria shall be implemented as mitigation to potentially inadequate emergency access. Suspending project operations for events that are forecast to produce 5-inches (or greater) of rainfall within a 24-hour period will prevent excessive storm runoff from potentially affecting access to locations both on- and off-site by emergency personnel. Additionally, suspending cloud seeding operations in the event of special conditions, such as search and rescue operations in the mountains, will prevent inadequate access by emergency personnel. With mitigation incorporated, a less than significant direct, indirect, or cumulative impact will occur on this item (refer to Mitigation Measure Water-1, Criteria 2 and 6).

- f) Discussion of Effects: Access to the 15 project sites is through fenced roads that only allow permitted access. Therefore, inadequate parking capacity will not pose any inconvenience. There are no direct, indirect, or cumulative impacts

Mitigation: None required.

- g) Discussion of Effects: The project does not conflict with any transportation policies, plans or programs. There are no direct, indirect, or cumulative impacts

Mitigation: None required.

#### 4.16 UTILITIES AND SERVICE SYSTEMS

-- Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed? In making this determination, the City shall consider whether the project is subject to the water supply assessment requirements of Water Code Section 10910, et. Seq. (SB 610), and the requirements of Government Code Section 664737 (SB 221).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a) Discussion of Effects: The project will not generate wastewater of any kind. There are no direct, indirect, or cumulative impacts

Mitigation: None required.

- b) Discussion of Effects: The project will not generate wastewater of any kind. There are no direct, indirect, or cumulative impacts

Mitigation: None required.



- c) Discussion of Effects: The project will not require the construction of new stormwater drainage facilities or expansion of existing facilities. There are no direct, indirect, or cumulative impacts.

Mitigation: None required.

- d) Discussion of Effects: The project will not require a water supply. There are no direct, indirect, or cumulative impacts.

Mitigation: None required.

- e) Discussion of Effects: The project will not generate wastewater. There are no direct, indirect, or cumulative impacts.

Mitigation: None required.

- f) Discussion of Effects: Solid waste generated by the project will consist exclusively of the bases of spent flares (non-hazardous) which are generated at a rate of approximately 42 pounds total per season for the remotely operated flare sites. There is ample capacity in the County's three landfills to accept this minimal amount of waste. As such, there are no direct, indirect, or cumulative impacts.

Mitigation: None required.

- g) Discussion of Effects: The project will comply with all federal, state, and local statutes and regulations regarding solid waste. Therefore, there are no direct, indirect, or cumulative impacts.

Mitigation: None required.



#### 4.17 MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Does the project have the potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- a) Discussion of Effects: The project will not degrade the quality of the environment, substantially reduce the habitat of any wildlife species, or have any significant direct impact to wildlife individuals or populations. As detailed within Section 4.3 – Air Quality, the project emits a less than significant amount of green house gases. Project sites were chosen specifically to avoid conflict with potential resources, including biological resources and habitat. All of the 15 sites are located on properties that have been previously graded, are currently fenced, and are often located adjacent to current industrial land uses such as storage yards, debris basins, utility sheds/structures, and telecommunications equipment. Therefore, there are less than significant direct, indirect, or cumulative impacts.

Mitigation: None required.

- b) Discussion of Effects: The project will not create any short-term environmental gains at the expense of long-term environmental goals. All beneficial environmental effects derived from the project will not hinder future environmental gain, regardless of the extent of future cloud seeding activities. All potential direct, indirect, and cumulative adverse environmental effects associated with the project are addressed through implementation of project features such as the suspension criteria, unit design, and specific locating of the cloud dispersion units.

Therefore, there are no direct, indirect, or cumulative impacts.

Mitigation: None required.

- c) Discussion of Effects: Currently, there are no known projects that, when considered in conjunction with the project, could create the potential for adverse cumulative impact. Most of the aspects of the proposed project have a very low potential to combine with other actions to create cumulatively significant impacts. The project has very minimal physical disturbance, operation of the project requires a minimal connection to communal resources and utilities, and it is unique to the point that it is very unlikely that a similar project would be implemented within the same target area.

With mitigation incorporated, a less than significant direct, indirect, or cumulative impact will occur. The cumulative effects which will be mitigated to less than significant by Mitigation Measure Water-1 are:

- Erosion caused by excessive storm runoff: Criteria 2 and 4.
- Flooding caused by excessive storm runoff: Criteria 2 and 3.
- Landslides caused by excessive storm runoff: 2 and 5.
- Inadequate emergency service response caused by excessive storm runoff: 2 and 5.

Mitigation: The suspension criteria, as outlined within the Description of Project section of this document, shall be implemented as mitigation for potential cumulatively considerable impacts associated with project implementation. With mitigation incorporated, a less than significant direct, indirect, or cumulative impact will occur. Refer to Mitigation Measure WATER-1, Criteria Nos. 2, 3, and 5.

- d) Discussion of Effects: The project is estimated to generate a 10 to 15 percent increase in precipitation within the target area. Potential secondary impacts from this additional precipitation could potentially lead to substantial adverse effects without the suspension criteria. However, the suspension criteria were developed specifically to minimize the potential for cloud seeding activities to create, either directly or indirectly, an adverse effect on human beings, property, or the environment.

With mitigation incorporated, a less than significant direct, indirect, or cumulative impact will occur. The cumulative effects which will be mitigated to less than significant by Mitigation Measure Water-1 are:

- Erosion caused by excessive storm runoff: Criteria 2 and 4.
- Flooding caused by excessive storm runoff: Criteria 2 and 3.
- Landslides caused by excessive storm runoff: 2 and 5.
- Inadequate emergency service response caused by excessive storm runoff: 2 and 5.

Mitigation: The project suspension criteria, as outlined within the Description of Project section of this document, shall be implemented herein as mitigation for potential adverse effects to human beings. With mitigation incorporated, a less than significant direct, indirect, or cumulative impact will occur. Refer to Mitigation Measure WATER-1, Criteria Nos. 2, 3, and 5.



## 5.0 MITIGATION MEASURES

**WATER-1:** To ensure that the project does not contribute to personal, property, or environmental injury, guidelines for suspension have been developed. Suspension of seeding is necessary due to hazardous weather, lack of runoff storage capacity, precipitation related problems, and other special circumstances. In addition, seeding will be temporarily suspended over areas that exhibit unstable soils due to seismic events and over recently burned areas until sufficient natural re-vegetation has occurred. This will prevent undue erosion, slides, mud flows, and/or downstream flooding,

The NAWC Project Meteorologist will recommend whether any restrictions or suspensions may be necessary during each seedable storm event. Using the NAWC Project Meteorologist's input and other information (reservoir levels, ALERT system data, special event schedules, etc.), the LACDPW's Storm Operations Director will decide whether cloud seeding should be conducted, continued, or suspended. LACDPW will consider all relevant circumstances prior to rendering decisions regarding restricting or suspending cloud seeding operations. The Storm Operations Director or his/her designated agent will always be available during seeding operations.

Cloud seeding activities will be suspended within the target watershed, or not initiated, during any storm predicted to produce 5.0 inches of rainfall or greater within a 24-hour period. This suspension criteria is independent of flood warnings or other watches being issued by the National Weather Service (NWS).

NWS issued Flash Flood Warnings for a target watershed will prevent initiation, or trigger an immediate suspension, of cloud seeding activities. Flash Flood Warnings are issued when flash flooding has been reported or is forecast as imminent within certain streams or areas. Weather conditions resulting in the issuance of these flood warnings often occur in the target watersheds. Seeding will only resume when additional meteorological information from the NWS or the NAWC Project Meteorologist indicates that the forecast on which the warning was based has been down-graded. This ensures that the portions of storms forecast to produce peak flows and floods are not seeded. This prevents the project from contributing, or being perceived to contribute, to personal, property, or environmental injury caused by naturally occurring weather phenomena.

The NWS issues other special weather bulletins based on forecasts during periods of hazardous weather phenomena. These include Flash Flood Warnings, Traveler's Advisories, and Winter Storm Warnings, which represent less intense storm events. Seeding will not necessarily be suspended solely on the issuance of these NWS bulletins, since the seeding will be conducted for, and limited to, relatively remote mountain areas. However, if the NWS issues a hazardous weather bulletin, the Project Meteorologist could recommend suspending seeding based on an analysis of weather conditions. Suspension of seeding would also occur during periods of heavy rainfall when the soil approaches the limit of its water-holding capacity and/or inflow to the reservoirs has substantially increased.

Rainfall and inflow would be closely monitored during all seeded storm events to determine if suspension of seeding was appropriate and/or necessary. If the targeted reservoirs were to become full, or nearly full, and capacity for containing excess runoff became questionable, seeding would be suspended for future storm events until sufficient reservoir storage capacity once again became available. Special conditions may also occur within the target areas when any amount of precipitation would be undesirable, including but not limited to, significant construction activities and search and rescue operations. Seeding would not be initiated during these situations. Suspension criteria for the program are outlined in the table below. The



process of suspending activities will involve continually monitoring criteria conditions described in Section 1.8.2.6 and Table 5 that is repeated below. Once suspension criteria have been met, LACDPW's Storm Operations Director, in coordination with NAWC, would direct cloud seeding operations to halt. NAWC operational personnel will be able to turn off individual manually operated cloud seeding equipment within 1-hour. Remotely operated cloud seeding generators will be stopped within 10 minutes. LACDPW will consider all relevant circumstances prior to rendering decisions regarding restricting or suspending cloud seeding operations. Cloud seeding locations experiencing rainfall below suspension criteria thresholds will continue to be operated until the targeted storm has passed.

**Weather Modification Program Suspension Criteria**

<b>Suspension Criteria</b>	<b>Description</b>
1. Dam Operations	Cloud seeding operations for upcoming storms will be suspended if reservoir storage is at a level where additional inflow to the reservoir from upcoming storms will result in water releases greater than the capacity of the downstream water conservation facilities. This would result in loss of water to the ocean. Additionally, suspension may occur if dam and reservoir construction efforts are being significantly impaired by increased inflow from cloud seeding activities. Cloud seeding will resume when the probability of water loss to the ocean is reduced or risk to dam maintenance and construction activities are mitigated.
2. Precipitation	Seeding may be suspended if precipitation rates exceed 1.0 inch per hour within the target watersheds. Seeding will be suspended if any storm is forecast to produce over 5.0 inches of rainfall within a 24-hour period in the target areas.
3. Weather Watch	Seeding will be suspended whenever the NWS issues a flash flood warning for the target areas. Seeding may be suspended whenever the NWS issues a Traveler's Advisory, Winter Storm Warning, or Flash Flood Watch. These advisories will be factored with other variables to determine whether seeding is suspended.
4. Fire Damage	Fires within target watersheds will lead to immediate suspension of seeding activities to prevent undue erosion, mud flow hazards, or flooding downstream of a burned area. Seeding suspension will continue until sufficient natural re-vegetation occurs to mitigate excessive erosion and sediment flows during storms.
5. Earthquake Damage	Earthquake damage to the soil structure may occur in target watersheds depending on the intensity and distance from the epicenter of an earthquake. During storm season, cloud seeding operations will be suspended if a 5.0 (Richter Scale) earthquake occurs within 50 miles, or alternatively a 4.0 earthquake occurs within 25 miles of any CNG installation site or target watershed, until an evaluation of the situation is completed. Damage to the soil structure may increase the potential for damaging landslides and mud flows during periods of moderate to heavy rainfall. Cloud seeding in the affected area may be suspended for the remainder of the storm season. LACDPW geology, geo-technical, and sedimentation personnel will analyze the impact to the soil structure and sediment transport to decide when cloud seeding may resume in the affected area.
6. Special Conditions	Seeding may be suspended due to special conditions such as significant construction activities, search and rescue operation, higher than normal public use such as holidays, and special events such as bicycle races or large public gatherings.
7. Los Angeles Basin	Seeding operations will not be conducted if they are predicted to have an impact within the Los Angeles Basin.
8. Special Authority	Seeding activities may be suspended for any circumstances that the LACDPW Operations Director or NAWC's Project Meteorologist deem unsafe. The Operations Director will make the final decision in the event of

disagreement.

## **6.0 REFERENCES**

ASCE Manuals and Reports on Engineering Practice No. 81, 2006. pg.66.

ASCE Standard 42-04, Standard Practice for the Design and Operation of Precipitation Enhancement Projects, 2004. pg.48.

ASCE, Sedimentation Manual-Manual 54, 2007.

British Columbia Ministry of the Environment, Land, and Parks, 1996, Ambient Water Quality Criteria for Silver.

California Air Pollution Control Officers Association, 2008. CEQA and Climate Change (White Paper).

California Air Resources Board, 2008. Draft Approaches for Setting Interim Significance Thresholds for Greenhouse Gases Under the California Environmental Quality Act.

California Code of Regulations, Title 22, Chapter 11, Appendix X. List of Chemical Names and Common Names for Hazardous Wastes and Hazardous Materials.

California Department of Transportation. Scenic Highway Mapping System. Accessed at [http://www.dot.ca.gov/hq/LandArch/scenic\\_highways](http://www.dot.ca.gov/hq/LandArch/scenic_highways).

California Department of Water Resources. 2009. Public review draft California Water Plan Update 2009.

California Health and Safety Code, Section 38505.

California Natural Diversity Database, 2009. RAREFIND2. Accessed May 2009.

California Office of Planning and Research, 2009. Proposed CEQA Guidelines Amendments for Green House Gas Emissions.

Cooper, C.F., and W.D. Jolly, 1969, Ecological Affects of Weather Modification: A Problem Analysis, University of Michigan School of Natural Resources.

County of Los Angeles General Plan, 1980.

Engineering-Science Inc., 1992, Weather Modification Program (Cloud Seeding) - Santa Clara Valley Water District: Draft Negative Declaration and Expanded Initial Study.

ENVIROSTOR Database, Department of Toxic Substances Control. Accessed at <http://www.envirostor.dtsc.ca.gov/public/>.

Governor's Office of Planning and Research, 2008. Preliminary Draft CEQA Guideline Amendments for Greenhouse Gas Emissions.

Griffith, D. A.; M.E. Solak, D. P. Yorty, 2009: 30+ Winter Seasons of Operational Cloud Seeding in Utah. WMA Journal of Weather Modification, 41 pp. 23-37

Griffith, D.A., 2009: San Gabriel Mountains Cloud Seeding Program Report. North American Weather Consultants Report No. 09-02 to Los Angeles County, Department of Public Works.

Griffith, D.A., M.E. Solak and D.P. Yorty, 2002: The San Gabriel Mountains Cloud Seeding Program, 2001-2002 Winter Season. North American Weather Consultants Report No. WM 02-3 to Los Angeles County Department of Public Works.



Griffith, D.A., M.E. Solak, 2006, The Potential Use of Winter Cloud Seeding Programs to Augment the Flow of the Colorado River: pg 24.

Henningson, Durham, and Richardson (HDR), 1975, Kaweah Weather Modification Program Final Environmental Impact Report.

Holland, R. F., California Fish and Game, 1986, Preliminary Descriptions of the terrestrial Natural Communities of California.

Janes, N., and R.C. Playle, 1995. Modeling Silver Binding to Gills of Rainbow Trout, Environmental Toxicology and Chemistry.

Klein, D. A., and E. M. Molise, 1975, Ecological Ramifications of Silver Iodide Nucleating Agent Accumulation in a Semi-arid Grassland Environment. Journal of Applied Meteorology.

Klein, D.A., 1978: Environmental Impacts of Artificial Ice Nucleating Agents. Dowden, Hutchinson and Ross, Inc., Stroudsburg, Pennsylvania.

Los Angeles County, 2007. Countywide Energy and Environmental Policy.

Los Angeles County Department of Public Works, 2006. Hydrology Manual.

Los Angeles County Department of Public Works, 2006. Sedimentation Manual.

Los Angeles County, Department of Regional Planning. 2008. <http://planning.co.la.ca.us/>.

Los Angeles Regional Water Quality Control Board. 2002. 2002 CWA Section 303(d) List of Water Quality Limited Segment.

Marler, B. L. Cloud Seeding Impacts? Lake Bed Sediment Analyses. WMA Annual Conference, San Francisco, CA, April 18-20, 2007.

Missouri University of Science and Technology, GE 441-Advanced Engineering Geology and Geotechnics, Various Aspects of Expansive Soil relevant to Geoengineering Practice, 2004

Propane Education and Research Council, 2008. Technology Fact Sheet. Accessed online at: [http://www.propanecouncil.org/uploadedFiles/FS\\_GHG\\_\(12294\)\\_9-26-07\\_Web.pdf](http://www.propanecouncil.org/uploadedFiles/FS_GHG_(12294)_9-26-07_Web.pdf)

Ryan, T., 2005: Weather Modification for Precipitation Augmentation and its Potential Usefulness to the Colorado River Basin States. Metropolitan Water District of Southern California Report, 34 pp.

Santa Barbara County Water Agency, 2000, Water Resources of Santa Barbara County -Water Supply Enhancement: pg.90.

Santa Barbara County. 2000. Negative Declaration for the Santa Barbara County/Twitchell Reservoir Cloud Seeding Program (00-ND-29).

Santa Barbara County. 2008. CEQA 15164 Addendum to Negative Declaration 00-ND-29.

Scientific Applications International Corporation (SAIC), 1993, Draft Weather Modification Program Environmental Assessment / Negative Declaration.

Sierra Cooperative Pilot Project, 1981, Environmental Assessment and Finding of No Significant Impact, USBR Denver.



South Coast Air Quality Management District, 2008. Climate Change Committee Meeting; Greenhouse Gas CEQA Significance Threshold. Accessed online at:  
[http://www.aqmd.gov/gb\\_comit/climate\\_change/2008/CC\\_2008-10-29.html](http://www.aqmd.gov/gb_comit/climate_change/2008/CC_2008-10-29.html)

South Coast Air Quality Management District, 2008. Draft Guidance Document - Interim CEQA Greenhouse Gas (GHG) Significance Threshold.

Stauffer, N., Jr., 2001: Cloud Seeding: The Utah Experience. WMA Journal of Weather Modification, 33, pp.63-69.

Thompson, J.R., K.J. Brown, and R.D. Elliott, 1975: Santa Barbara Convective Band Seeding Test Program, Final Report. Naval Weapons Center, China Lake, California.

Thompson, John, Rea Strange. Report No. 6-137: Evaluation of Weather Modification Program in the San Gabriel Mountains 1974-75. pg. 4-6.

TRC Mariah Associates Inc., 1998: Weather Modification Program, Draft Negative Declaration. Los Angeles County Department of Public Works, Alhambra, California.

United States Department of Agriculture, Forest Service, 2005: Land Management Plan Part 1 Southern California National Forest Vision: pg 41.

United States Department of Agriculture, 1987, Angeles National Forest Land and Resources Management Plan - Final Environmental Impact Statement.

United States Department of Agriculture, Natural Resources Conservation Service. National Cooperative Web Soil Survey. <http://websoilsurvey.nrcs.usda.gov/app/>. Accessed 1/12/2009.

United States Fish and Wildlife Service, 1994, Letter to Colonel Robert VanAntwerp, District Engineer, Los Angeles District, Corps of Engineers, Los Angeles, California concerning Biological Opinion for Cosmo World Golf Club Project in Big Tujunga Wash, Los Angeles, California,

United States Geological Survey, 2005. Fact Sheet 2005-3156.

Weather Modification Association, 2005: Weather Modification Capability Statement on Weather Modification.

Weaver, T., and A. Super, 1972, Some Ecological Consequences of Cloud Seeding With Silver Iodide in the Bridger Range Montana: pg. 26-28.

Williams, B.D., and J.A. Denhlom, 2009: An Assessment of the Environmental Toxicity of Silver Iodide- With Reference to a Cloud Seeding trial in the Snowy Mountains of Australia. WMA Journal of Weather Modification, 41, pp. 75-96.

## **APPENDIX A**

### **MSI Report for PM2.5 Modeling**



March 6, 2009

Mr. Don A. Griffith North American Weather Consultants Inc. 8180 South Highland Dr., Suite B-2 Sandy, Utah 84093

Subject: LA Generator Pollution Calculations

Dear Mr. Griffith:

Meteorological Solutions Inc. (MSI) conducted dispersion modeling using AERMOD to predict concentrations of PM<sub>2.5</sub> released from a silver iodide generator or from a silver iodide (AgI) flare site. This letter summarizes the results of the modeling. Several assumptions were made in the conduct of this modeling:

Meteorological data from the Los Angeles Airport (LAX) for the year 2004 and the Burbank Airport (BUR) for the year 2006 were used to simulate dispersion of PM<sub>2.5</sub>. Stability classes of E and F were removed from the meteorological data set since seeding activities do not occur during stable atmospheric conditions. All meteorological data were obtained from the National Climatic Data Center (NCDC) and are considered reliable and representative of the entire modeling year.

The AgI source and modeling receptors were entered into the model with an elevation of 0 meters above sea level.

We assumed that all of the AgI emissions were immediately converted to PM<sub>2.5</sub>.

The emissions and source information which were modeled are presented in Table 1 below. A receptor grid was put into the model extending 200 meters beyond a fence line which was no closer than 30.5 meters (~100 feet) away from the release site to simulate expected site access restrictions.

Emission rates for the seeding generator were assumed to be 24 g/hr of AgI for a 24-hour generation period.

Emission rates for the seeding flare were assumed to be 15 g/flare with a maximum of 24 flares burned in a 24-hour period.

Sources were modeled as a point source.



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**Table 1**  
**AERMOD Source Input Parameters and Emission Rates**

Source	Stack Parameters				PM <sub>2.5</sub> (g/sec)
	Height (m)	Diameter (m)	Velocity (m/s)	Temp. (k)	
Generator	1.5	0.4572	0.3048	973	0.006667
Flare	1.5	0.4572	0.3048	1773	0.004167

Table 2 presents the five highest modeled concentrations using hourly meteorological data from LAX in 2004 excluding atmospheric stability classes E and F; receptor locations (in meters) relative to the release site where the highest modeled concentration occurred are also included in the table.

**Table 2**  
**Five Highest Modeled Concentrations and Receptor Locations  
for Meteorological Data from LAX in 2004**

Source	24-hour PM <sub>2.5</sub> (µg/m <sup>3</sup> )	X <sup>1</sup> (meters)	Y <sup>1</sup> (meters)
Generator	4.1	-30.5	-2.3
	3.8	-30.5	-7.0
	3.8	-30.5	2.3
	3.4	-30.5	-11.7
	3.3	-30.5	7.0
Flare	2.5	-30.5	-2.3
	2.3	-30.5	-7.0
	2.3	-30.5	2.3
	2.1	-30.5	-11.7
	2.0	-30.5	7.0

<sup>1</sup> The fence line is no closer than 30.5 meters (~100 feet) away from the source location.

Table 3 presents the five highest modeled concentrations using hourly meteorological data from BUR in 2006 excluding atmospheric stability classes E and F; receptor locations (in meters) relative to the release site where the concentration occurred are also included in the table.



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**Table 3**  
**Five Highest Modeled Concentrations and Receptor Locations**  
**for Meteorological Data from BUR in 2006**

Source	24-hour PM <sub>2.5</sub> (µg/m <sup>3</sup> )	X <sup>1</sup> (meters)	Y <sup>1</sup> (meters)
Generator	10.2	2.3	30.5
	9.9	-2.3	30.5
	9.0	7.0	30.5
	8.5	0.0	35.0
	8.4	5.0	35.0
Flare	5.9	2.3	30.5
	5.8	-2.3	30.5
	5.2	7.0	30.5
	4.9	0.0	35.0
	4.7	5.0	35.0

<sup>1</sup> The fence line is no closer than 30.5 meters (~100 feet) away from the source location.

In summary, the AERMOD dispersion model was used in the analysis of emissions of two cloud seeding methods. The model output represents the maximum concentration predicted at a receptor using meteorological data from LAX and BUR airports. Receptors were no closer than 30.5 meters (~100 feet) from the source. Maximum PM<sub>2.5</sub> concentrations occurred west of the source when using 2004 data from LAX, while maximum concentrations occurred north of the source when using 2006 data from BUR. The manual silver iodide generator had a maximum 24-hour PM<sub>2.5</sub> concentration of 10.2 µg/m<sup>3</sup> in 2006 using BUR data. This is below the EPA 24-hour PM<sub>2.5</sub> standard of 35 µg/m<sup>3</sup>. The remotely operated silver iodide flare site had a maximum 24-hour PM<sub>2.5</sub> concentration of 5.9 µg/m<sup>3</sup> also in 2006 data using BUR data. This is below the EPA 24-hour PM<sub>2.5</sub> standard of 35 µg/m<sup>3</sup>. Attachment 1 presents concentration isopleths plots for the two cloud seeding methods using LAX and BUR meteorological data.

If you have any questions concerning this report, please feel free to contact us.

George Wilkerson, President



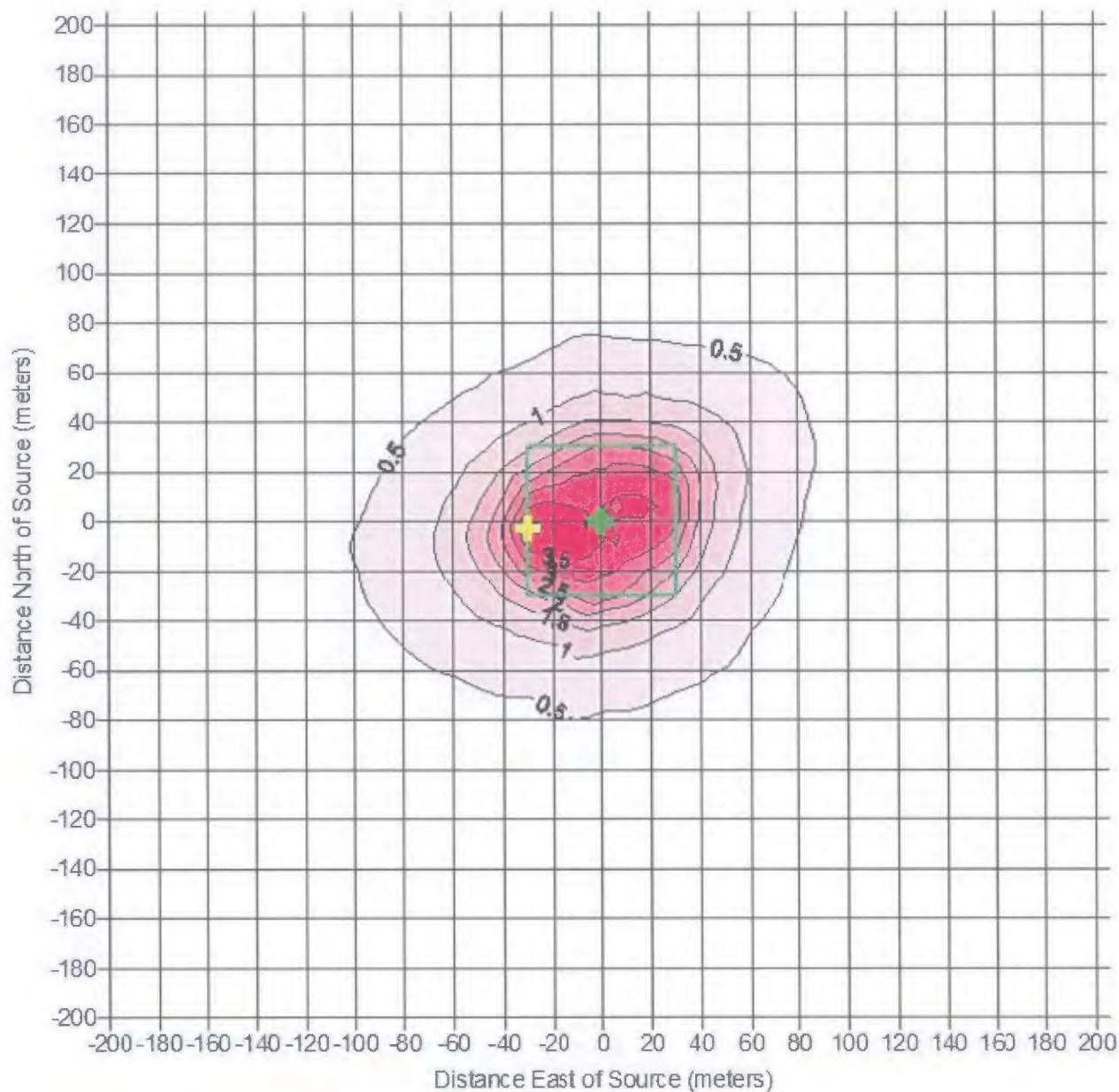
**ATTACHMENT 1**  
**Concentration Isopleth Plots**





**LAX**  
**Concentration Isopleth Plots**

### AERMOD Generator Contour Map Using 2004 LAX Data (Contour in $\mu\text{g}/\text{m}^3$ )

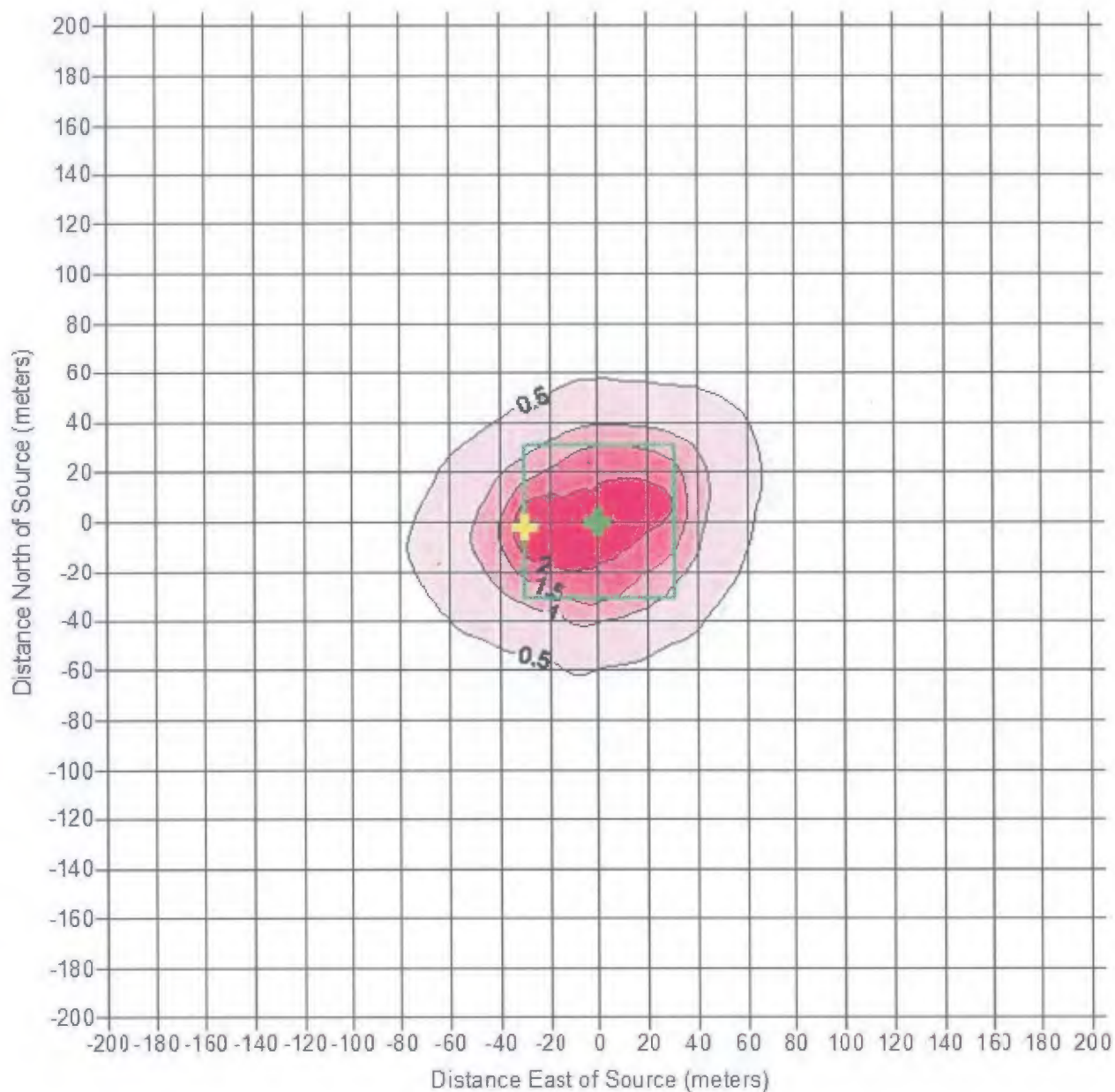


2257 S 1100 E, Suite 203 SLC, UT 84106

Phone 801.474.3826 Fax 801.474.0766

www.metsolutions.com info@metsolutions.com

### AERMOD Flare Contour Map Using 2004 LAX Data (Contour in $\mu\text{g}/\text{m}^3$ )



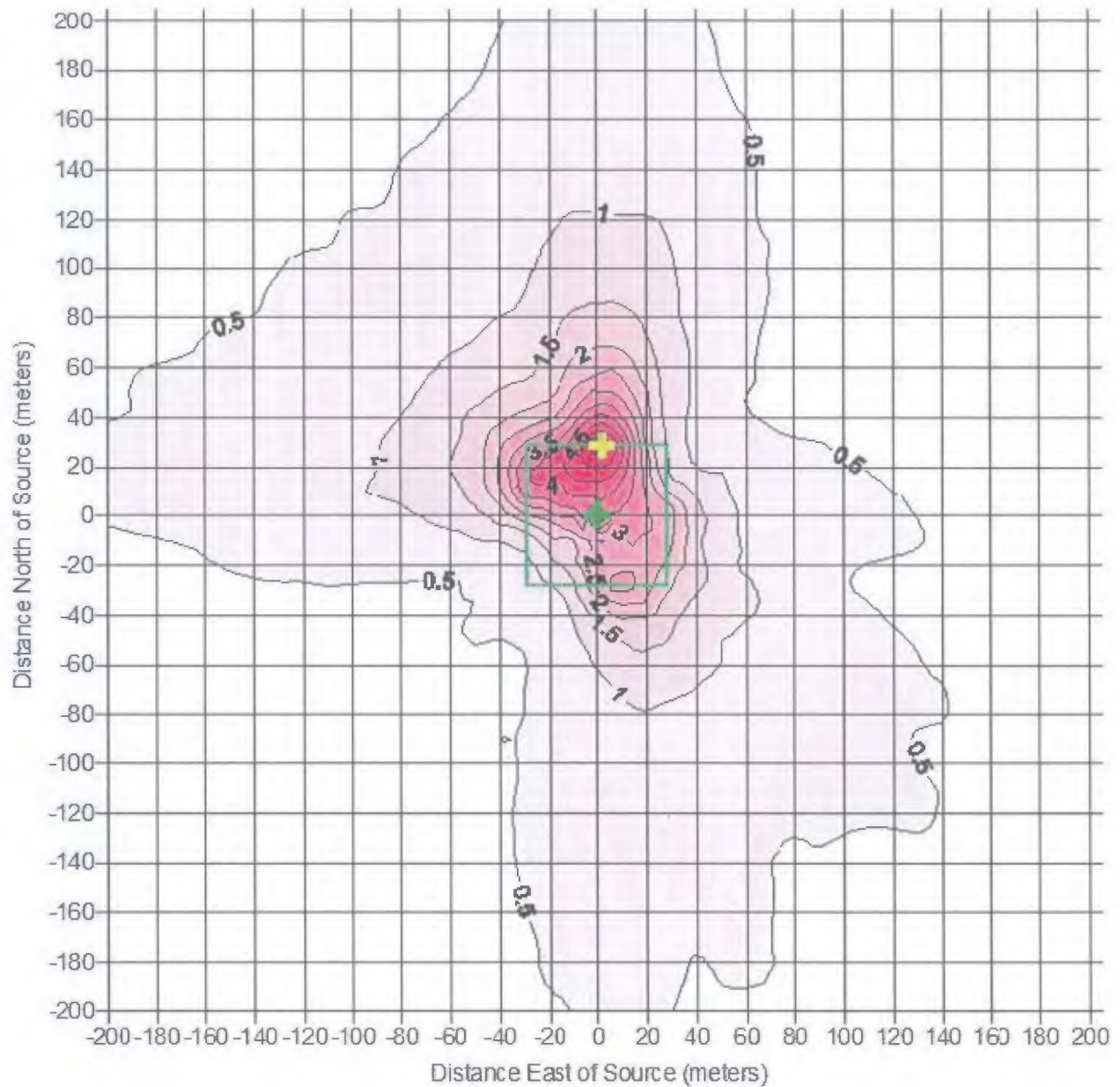


**BUR**  
**Concentration Isopleth Plots**

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### AERMOD Flare Contour Map Using 2006 BUR Data (Contour in $\mu\text{g}/\text{m}^3$ )



## **APPENDIX B**

### **Manual Generator, BTU Output**

## HEAT OUTPUT OF NAWC MANUALLY-OPERATED CNG

Operating pressure	6-7 psi
Propane supply line	0.25 inch
Nozzle type	1/4JN-SS+SU2-SS
Propane combustion rate	~ 0.75 gal per hour
Acetone combustion rate	0.12 gal per hour (standard) 0.24 gal per hour (LA DPW)

- 1 gal of liquid propane (~ 36.4 cu ft in gas phase) during combustion generates ~91,600 BTU.

NAWC's manual CNG's consume propane at the rate of ~0.75 gal per hour, so the output is ~68,700 BTU per hour.

- The standard CNG configuration is an acetone solution burn rate of 0.12 gal per hour, so the output is ~9,945 BTU at that rate.

The LA DPW CNG rate is 0.24 gal per hour, so the output is ~19,890 BTU per hour at that rate.

- So, the standard configuration heat generation rate is ~78,645 BTU per hour, and The LA DPW configuration is ~88,590 BTU

## **APPENDIX C**

### **CNDDDB Species Table**

# Appendix C

## Natural Diversity Database(CNDDDB) RareFind2 data (2006)

### County of Los Angeles Cloud-Seeding Project:

#### Sensitive Species Potentially Occurring in Site Locations or Target Areas

PLANTS					
Species Common Name	Species Scientific Name	Federal	State	CDFG/CNPS	
Alkali mariposa-lily	<i>Calochortus striatus</i>	-	-	1B.2	
Big Bear Valley woollypod	<i>Astragalus leucolobus</i>	-	-	1B.2	
Braunton's milk-vetch	<i>Astragalus brauntonii</i>	E	-	1B.1	
California muhly	<i>Muhlenbergia californica</i>	-	-	4.3	
California Orcutt grass	<i>Orcuttia californica</i>	E	E	1B.1	
California satintail	<i>Imperata brevifolia</i>	-	-	2.1	
California saw-grass	<i>Cladium californicum</i>	-	-	2.2	
Davidson's bush-mallow	<i>Malacothamnus davidsonii</i>	-	-	1B.2	
Davidson's saltscale	<i>Atriplex serenana</i> var. <i>davidsonii</i>	-	-	1B.2	
Ewan's cinquefoil	<i>Potentilla glandulosa</i> ssp. <i>evanii</i>	-	-	1B.3	
Greata's aster	<i>Symphytotrichum greatae</i>	-	-	1B.3	
Hall's monardella	<i>Monardella macrantha</i> ssp. <i>hallii</i>	-	-	1B.3	
Hot springs fimbriatylis	<i>Fimbristylis thermalis</i>	-	-	2.2	
Johnston's buckwheat	<i>Eriogonum microthecum</i> var. <i>johnstonii</i>	-	-	1B.3	
Lemon lily	<i>Lilium parryi</i>	-	-	1B.2	
Los Angeles sunflower	<i>Helianthus nuttallii</i> ssp. <i>parishii</i>	-	-	1A	
Many-stemmed dudleya	<i>Dudleya multicaulis</i>	-	-	1B.2	
Mason's neststraw	<i>Stylocline masonii</i>	-	-	1B.1	
Mesa horkelia	<i>Horkelia cimeata</i> ssp. <i>puberula</i>	-	-	1B.1	
Mt. Gleason paintbrush	<i>Castilleja gleasonii</i>	-	Rare	1B.2	
Nevin's barberry	<i>Berberis nevadensis</i>	E	E	1B.1	
Orcutt's linanthus	<i>Linanthus orcuttii</i>	-	-	1B.3	
Palmer's grapplehook	<i>Harpagonella palmeri</i>	-	-	4.2	
Palmer's mariposa-lily	<i>Calochortus palmeri</i> var. <i>palmeri</i>	-	-	1B.2	
Parish's gooseberry	<i>Ribes divaricatum</i> var. <i>parishii</i>	-	-	1A	
Parry's spineflower	<i>Chorizanthe parryi</i> var. <i>parryi</i>	-	-	1B.1	
Peirson's lupine	<i>Lupinus peirsonii</i>	-	-	1B.3	
Plummer's mariposa-lily	<i>Calochortus plummerae</i>	-	-	1B.2	
Robinson's pepper-grass	<i>Lepidium virginicum</i> var. <i>robinsonii</i>	-	-	1B.2	
Rock Creek broomrape	<i>Orobancha valida</i> ssp. <i>valida</i>	-	-	1B.2	
Rock-loving oxytrope	<i>Oxytropis oreophila</i> var. <i>oreophila</i>	-	-	2.3	
Round-leaved filaree	<i>California macrophylla</i>	-	-	1B.1	
San Antonio milk-vetch	<i>Astragalus lentiginosus</i> var. <i>antoniui</i>	-	-	1B.3	
San Bernardino aster	<i>Symphytotrichum defoliatum</i>	-	-	1B.2	
San Bernardino grass-of-Parnassus	<i>Parnassia cirrata</i> var. <i>cirrata</i>	-	-	1B.3	
San Fernando Valley spineflower	<i>Chorizanthe parryi</i> var. <i>fernandina</i>	Candidate	E	1B.1	
San Gabriel bedstraw	<i>Galium grande</i>	-	-	1B.2	
San Gabriel linanthus	<i>Linanthus concinnus</i>	-	-	1B.2	
San Gabriel manzanita	<i>Arctostaphylos gabrielensis</i>	-	-	1B.2	
San Gabriel Mountains dudleya	<i>Dudleya densiflora</i>	-	-	1B.1	
San Gabriel River dudleya	<i>Dudleya cymosa</i> ssp. <i>crebrifolia</i>	-	-	1B.2	
Scalloped moonwort	<i>Botrychium crenulatum</i>	-	-	2.2	
Short-joint beavertail	<i>Opuntia basilaris</i> var. <i>brachyclada</i>	-	-	1B.2	
Short-sepaled lewisia	<i>Lewisia brachycalyx</i>	-	-	2.2	
Slender mariposa-lily	<i>Calochortus clavatus</i> var. <i>gracilis</i>	-	-	1B.2	
Slender silver moss	<i>Anomobryum julaceum</i>	-	-	2.2	
Slender-horned spineflower	<i>Dodecahema leptoceras</i>	E	E	1B.1	
Sonoran maiden fern	<i>Thelypteris puberula</i> var. <i>sonorensis</i>	-	-	2.2	
Southern alpine buckwheat	<i>Eriogonum kennedyi</i> var. <i>alpinum</i>	-	-	1B.3	
Southern tarplant	<i>Centromadia parryi</i> ssp. <i>australis</i>	-	-	1B.1	
Thread-leaved brodiaea	<i>Brodiaea filifolia</i>	T	E	1B.1	
Western sedge	<i>Carex occidentalis</i>	-	-	2.3	
White pygmy-poppy	<i>Campanula candida</i>	-	-	4.2	
White rabbit-tobacco	<i>Pseudognaphalium leucocephalum</i>	-	-	2.2	
Woolly mountain-parsley	<i>Oreonana vestita</i>	-	-	1B.3	



Appendix C  
Natural Diversity Database(CNDDDB) RareFind2 data (2006) - Continued

INVERTEBRATES					
Species Common Name	Species Scientific Name	Federal	State	CDFG/CNPS	
None resulting from CNDDB.					
FISH					
Santa Ana sucker	<i>Catostomus santaanae</i>	T	-	SC	
Santa Ana speckled dace	<i>Rhinichthys osculus</i> ssp. 3	-	-	SC	
Unarmored threespine stickleback	<i>Gasterosteus aculeatus williamsoni</i>	E	E	FP	
Arroyo chub	<i>Gila orcutti</i>	-	-	SC	
AMPHIBIANS					
Arroyo toad	<i>Anaxyrus californicus</i>	E	-	SC	
Coast Range newt	<i>Taricha torosa torosa</i>	-	-	SC	
Sierra Madre yellow-legged frog	<i>Rana muscosa</i>	E	-	SC	
Western spadefoot	<i>Spea hammondi</i>	-	-	SC	
REPTILES					
California mountain kingsnake (San Bernardino pop.)	<i>Lampropeltis zonata (parvirubra)</i>	-	-	SC	
Coast (San Diego) horned lizard	<i>Phrynosoma coronatum (blainvillii pop.)</i>	-	-	SC	
Orange-throated whiptail	<i>Aspidoscelis hyperythra</i>	-	-	SC	
Silvery legless lizard	<i>Anniella pulchra pulchra</i>	-	-	SC	
Southwestern pond turtle	<i>Actinemys marmorata pallida</i>	-	-	SC	
Two-striped garter snake	<i>Thamnophis hammondi</i>	-	-	SC	
BIRDS					
American peregrine falcon	<i>Falco peregrinus anatum</i>	D	E	-	
Black swift	<i>Cypseloides niger</i>	-	-	SC	
Burrowing owl	<i>Athene cunicularia</i>	-	-	SC	
Coastal California gnatcatcher	<i>Poliopitila californica californica</i>	T	-	SC	
Le Conte's thrasher	<i>Toxostoma lecontei</i>	-	-	SC	
Least Bell's vireo	<i>Vireo bellii pusillus</i>	E	E	-	
Southern California rufous-crowned sparrow	<i>Aimophila ruficeps canescens</i>	-	-	WL	
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	E	E	-	
Western yellow-billed cuckoo	<i>Coccyzus americanus occidentalis</i>	Candidate	E	-	
MAMMALS					
American badger	<i>Taxidea taxus</i>	-	-	SC	
Big free-tailed bat	<i>Nyctinomops macrotis</i>	-	-	SC	
Mohave ground squirrel	<i>Spermophilus mohavensis</i>	-	T	-	
Nelson's antelope squirrel	<i>Ammospermophilus nelsoni</i>	-	T	-	
Northwestern San Diego pocket mouse	<i>Chaetodipus fallax fallax</i>	-	-	SC	
Pallid bat	<i>Antrozous pallidus</i>	-	-	SC	
Pallid San Diego pocket mouse	<i>Chaetodipus fallax pallidus</i>	-	-	SC	
San Diego black-tailed jackrabbit	<i>Lepus californicus bennettii</i>	-	-	SC	
San Diego desert woodrat	<i>Neotoma lepida intermedia</i>	-	-	SC	
South coast marsh vole	<i>Microtus californicus stephensi</i>	-	-	SC	
Southern grasshopper mouse	<i>Onychomys torridus ramona</i>	-	-	SC	
Western mastiff bat	<i>Eumops perotis californicus</i>	-	-	SC	
Western yellow bat	<i>Lasiurus xanthinus</i>	-	-	SC	

Note: Letters in the last column denote refer to CDFG status; numbers in the last column refer to CNPS status.

**KEY - Federal and State Listing Status**

E= Endangered  
T= Threatened  
SC= California Species of Special Concern  
FP= Fully Protected  
WL = Watch List  
Candidate= Candidate for Listing

**KEY- CNPS**

1A= Plants presumed Extinct in California  
1B= Plants Rare, Threatened, or Endangered in California and Elsewhere  
2= Plants Rare, Threatened, or Endangered in California, but more Common Elsewhere  
4= Plants of Limited Distribution - A Watch List  
0.1= Seriously threatened in California  
0.2= Fairly threatened in California  
0.3= Not very threatened in California

## Appendix C

### 1998 Weather Modification Program, Final ND

**Table 3.5 Sensitive Species Known from or Potentially Occurring in CNG Site Locations or Target Areas.**

Species Common Name	Scientific Name	Federal <sup>1,2</sup>	State <sup>2</sup>	CNPS <sup>3</sup> /CDFG <sup>4</sup>
<b>Plants</b>				
Marsh sandwort (believed extirpated)	<i>Arenaria paludicola</i>	E	E	1B
Braunton's milkvetch	<i>Astragalus brauntonii</i>	E	—	1B
Gambel's watercress	<i>Rorippa gambelii</i>	E	T	1B
Slender-horned spineflower	<i>Dodecahema leptoceras</i>	E	E	1B
Nevin's barberry	<i>Berberis nevinii</i>	PE	E	1B
Thread-leaved brodiaea	<i>Brodiaea filifolia</i>	PT	E	1B
San Gabriel Mountains dudleya	<i>Dudleya densiflora</i>	C	—	1B
Plummer's mariposa lily	<i>Calochortus plummerae</i>	—	—	1B
Davidson's bush mallow	<i>Melacothamnus davidsonii</i>	—	—	1B
Robinson's pepper-grass	<i>Lepidium virginicum</i> var. <i>Robinsonii</i>	—	—	1B
San Gabriel bedstraw	<i>Galium grande</i>	—	—	1B
<b>Birds</b>				
California condor	<i>Gymnogyps californianus</i>	E	E	—
American peregrine falcon (nesting)	<i>Falco peregrinus anatum</i>	E	E	—
Least Bells vireo (nesting)	<i>Vireo belii pusillus</i>	E	E	—
Southwestern willow flycatcher (nesting)	<i>Empidonax traillii eximius</i>	E	—	—
Bald eagle (nesting and wintering)	<i>Haliaeetus leucocephalus</i>	T	E	—
California gnatcatcher	<i>Polioputilla californica californica</i>	T	—	SC
Western yellow-billed cuckoo (nesting)	<i>Coccyzus americanus occidentalis</i>	—	E	—
Bank swallow (nesting)	<i>Riparia riparia</i>	—	T	—
<b>Fish</b>				
Unarmored threespine stickleback	<i>Gasterosteus aculeatus williamsoni</i>	E	E	—
Santa Ana sucker	<i>Catostomus santaanae</i>	C	—	SC
Southern steelhead	<i>Oncorhynchus mykiss</i>	E	—	—
Arroyo chub	<i>Gila arcuata</i>	—	—	SC
<b>Amphibians</b>				
Arroyo toad	<i>Bufo microscaphus californicus</i>	E	—	SC
California red-legged frog	<i>Rana aurora draytonii</i>	T	—	SC
<b>Reptiles</b>				
Desert tortoise	<i>Xerobates (Gopherus) agassizi</i>	T	T	—
San Diego horned lizard	<i>Phrynosoma coronatum blainvilliei</i>	—	—	SC

Sources: Personal communication, 1998, with Bill Brown, USFS/ANF; personal communication, 1998, with Scott Eliason, USFWS; California Department of Fish and Game 1997, 1998a, 1998b, 1998c.

<sup>1</sup> Federal Status for San Gabriel Mountains/Angelinos National Forest determined by USFWS.

<sup>2</sup> Abbreviations for Federal and State Listings: E = endangered; T = threatened; PE = proposed endangered; PT = proposed threatened; C = candidate.

<sup>3</sup> CNPS = California Native Plant Society; 1B = rare or endangered in California and elsewhere.

<sup>4</sup> CDFG = California Department of Fish and Game; SC = special concern.

## **APPENDIX D**

### **DRAFT MND COMMENTS AND RESPONSES**



United States  
Department of  
Agriculture

Forest  
Service

Angeles National Forest  
SO

701 N. Santa Anita Ave.  
Arcadia, CA 91006-2725  
626-574-1613 Voice  
800-735-5789 CRS

File Code: 2530

Date: August 27, 2009

Mr. William Saunders  
County of Los Angeles Department of Public Works  
Water Resources Division, 2nd Floor  
PO Box 1460  
Alhambra, California 91802-1460

Dear Mr. Saunders:

Thank you for providing us an opportunity to comment on your proposed Weather Modification Program for the San Gabriel Mountains.

In the past we have declined to issue special use permits for similar weather modification projects proposed by the County that sought to install cloud seeding equipment on National Forest System lands because of concerns about potential local flooding and slope failure. We understand that in this case no equipment installation will occur on National Forest System (NFS) lands and no such permits are therefore necessary.

To provide for the best possible project success with the least potentially undesirable consequences, we feel that a yearly planning meeting should be established where we can provide you with information on recent wildland fires, as well as planned hazardous fuel reduction projects, construction projects, and other ground disturbing activities on NFS lands within the target watersheds. We also suggest that the County establish and publicize an emergency contact number for use during weather modification operational cycles, so that local concerns related to search and rescue activities, and updates related to earthquakes, avalanches, and flooding can be quickly addressed.

As the Angeles National Forest manages the majority of the land acres and watersheds potentially impacted by this project, we are requesting that you submit an annual report to us listing at a minimum the location, time, duration, and amount of cloud seeding material released.

We would also be willing to work with you in evaluating application locations that would be beneficial to both agencies.

Please contact Paul Gregory, Forest Hydrologist, at (626) 574-5257 if you have any follow up questions or concerns.

Sincerely,

*Marty Dumps*  
(for) JODY NOIRON  
Forest Supervisor



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GAIL FARBER, Director

## COUNTY OF LOS ANGELES

### DEPARTMENT OF PUBLIC WORKS

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ALHAMBRA, CALIFORNIA 91803-1331  
Telephone (626) 458-5100  
<http://dpw.lacounty.gov>

ADDRESS ALL CORRESPONDENCE TO  
P.O. BOX 1460  
ALHAMBRA, CALIFORNIA 91802-1460

IN REPLY PLEASE  
REFER TO FILE **WR-4**

September 16, 2009

Ms. Jodi Noiron  
United States Department of Agriculture  
Forest Service  
701 North Santa Anita Avenue  
Arcadia, CA 91006-2725

Dear Ms. Noiron:

#### **WEATHER MODIFICATION (CLOUD SEEDING) PROGRAM DRAFT MITIGATED NEGATIVE DECLARATION – COUNTY OF LOS ANGELES**

We received your letter dated August 27, 2009, providing comments on the above-mentioned document. In summary, you requested the following:

1. An annual meeting be held to discuss ground disturbing activities taking place or planned on National Forest Service lands, which could impact cloud seeding efforts.
2. An emergency contact number be published for use during seeding operations.
3. The United States Forest Service (USFS) receives an annual report listing the location, time, duration, and amount of cloud seeding material released into the targeted watersheds.

Unfortunately, recent wildfires have burned a majority of the targeted watersheds. As detailed within the suspension criteria of the draft mitigated negative declaration, cloud seeding operations will likely be suspended until the targeted watersheds' vegetative cover has sufficiently recovered from the burn.



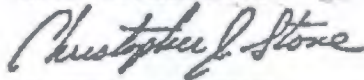
Ms. Jody Noiron  
September 16, 2009  
Page 2

When the Cloud Seeding Program resumes, we will coordinate a prestorm meeting with the USFS where contact information will be provided. In addition, we will provide the annual report for your records. These changes have been incorporated into the final mitigated negative declaration and will be included in future cloud seeding operational protocols.

If you have any further questions regarding this matter, you or your staff may contact Mr. William Saunders at (626) 458-6187 or at [wsaunder@dpw.lacounty.gov](mailto:wsaunder@dpw.lacounty.gov).

Very truly yours,

GAIL FARBER  
Director of Public Works



CHRISTOPHER STONE  
Assistant Deputy Director  
Water Resources Division

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WS  
AGC  
WS:vt  
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ARNOLD SCHWARZENEGGER  
GOVERNOR

STATE OF CALIFORNIA  
GOVERNOR'S OFFICE of PLANNING AND RESEARCH  
STATE CLEARINGHOUSE AND PLANNING UNIT



CYNTHIA BRYANT  
DIRECTOR

August 28, 2009

William Saunders  
Los Angeles County Department of Public Works  
900 S. Fremont Avenue  
Alhambra, CA 91803

Subject: County of Los Angeles Weather Modification Project  
SCH#: 2009071101

Dear William Saunders:

The State Clearinghouse submitted the above named Mitigated Negative Declaration to selected state agencies for review. The review period closed on August 25, 2009, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act.

Please call the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process. If you have a question about the above-named project, please refer to the ten-digit State Clearinghouse number when contacting this office.

Sincerely,

for Scott Morgan  
Acting Director, State Clearinghouse

Document Details Report  
State Clearinghouse Data Base

**SCH#** 2009071101  
**Project Title** County of Los Angeles Weather Modification Project  
**Lead Agency** Los Angeles County

**Type** MND Mitigated Negative Declaration  
**Description** The project is to operate a weather modification (cloud seeding) program in select San Gabriel Mountain watersheds to augment precipitation and enhance storm runoff conservation.

**Lead Agency Contact**

**Name** William Saunders  
**Agency** Los Angeles County Department of Public Works  
**Phone** 626-458-6186 **Fax**  
**email**  
**Address** 900 S. Fremont Avenue  
**City** Alhambra **State** CA **Zip** 91803

**Project Location**

**County** Los Angeles  
**City**  
**Region**  
**Lat / Long**  
**Cross Streets** countywide  
**Parcel No.**  
**Township**

**Range**

**Section**

**Base**

**Proximity to:**

**Highways**  
**Airports**  
**Railways**  
**Waterways**  
**Schools**  
**Land Use** LU: Open Space/Flood Control/Public Facility  
Zoning: Open Space/Watershed/Residential

**Project Issues** Air Quality; Biological Resources; Cumulative Effects; Drainage/Absorption; Flood Plain/Flooding; Geologic/Seismic; Landuse; Soil Erosion/Compaction/Grading; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian

**Reviewing Agencies** Resources Agency; Department of Fish and Game, Region 5; Department of Parks and Recreation; Department of Water Resources; California Highway Patrol; Caltrans, District 7; Regional Water Quality Control Board, Region 4; Native American Heritage Commission; San Gabriel & Lower Los Angeles Rivers & Mountains Conservancy; Other Agency(ies)

**Date Received** 07/27/2009 **Start of Review** 07/27/2009 **End of Review** 08/25/2009

Note: Blanks in data fields result from insufficient information provided by lead agency.



California Natural Resources Agency  
DEPARTMENT OF FISH AND GAME  
South Coast Region  
4949 Viewridge Avenue  
San Diego, CA 92123  
(858) 467-4201  
<http://www.dfg.ca.gov>

ARNOLD SCHWARZENEGGER, Governor  
DONALD KOCH, Director



September 17, 2009

Mr. William Saunders  
Los Angeles County Dept. of Public Works  
900 S. Fremont Ave.  
Alhambra, CA 91803

**Subject: Draft Mitigated Negative Declaration for County of Los Angeles Weather Modification Project SCH #2009071101, Los Angeles County**

Dear Mr. Saunders:

The Department of Fish and Game (Department) has reviewed the draft Mitigated Negative Declaration (DMND) for the County of Los Angeles Weather Modification Project (WMP). As described in the DMND, the WMP will construct a total of 10 cloud seeding sites in the initial phase of the project, with the potential for five additional sites at a later phase. The seeding sites will all be located on the south slopes of the San Gabriel Mountains and will be constructed in dams, debris basins, and sediment placement sites owned by Los Angeles County Flood Control District. Cloud seeding will only be performed during the rainy season, October through April and will utilize silver iodide flares and silver iodide generators which are expected to increase rainfall a maximum of 10%-15%.

The Department has prepared the following statements and comments pursuant to our authority as Trustee Agency with jurisdiction over natural resources affected by the project under the California Environmental Quality Act (CEQA Section 15386) and Responsible Agency (Section 15381) over those aspects of the proposed project that come under the purview of the California Endangered Species Act (Fish and Game Code Section 2050 et seq) and Fish and Game Code Section 1600 et seq. regarding impacts to streams and lakes.

#### **Impacts to Biological Resources**

##### **1. Direct and Cumulative Impacts**

- a. The DMND describes how the project will result in minimal impacts to wildlife habitat and recreation within the proposed construction zone on the project site however the Biological and Hydrological discussions in the DMND do not adequately recognize and address resource values and project direct and cumulative impacts to all downstream biotic resource beneficial uses including riparian, upland, and sensitive habitats that would receive altered rain patterns and prolonged snow pack anticipated from this project.

The DMND did not state if protocol surveys for sensitive plants and animals were conducted within areas where construction of the seeding mechanism will occur.

##### **2. Impacts to Nesting Birds**

The project may result in the removal of vegetation and disturbances to the ground and therefore may result in take of nesting native bird species.

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Mr. William Saunders  
September 17, 2009  
Page 2 of 3

- a. Please be advised that Migratory non-game native bird species are protected by international treaty under the Federal Migratory Bird Treaty Act (MBTA) of 1918(50 C.F.R. Section 10.13). Sections 3503, 3503.5 and 3513 of the California Fish and Game Code prohibit take of all birds and their active nests including raptors and other migratory non-game birds (as listed under the Federal MBTA). Proposed project activities (including disturbances to native and non-native vegetation, structures and substrates) should take place outside of the breeding bird season which generally runs from March 1- August 31 (as early as February 1 for raptors) to avoid take (including disturbances which would cause abandonment of active nests containing eggs and/or young). Take means to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill (Fish and Game Code Section 86).
  - b. If project activities cannot feasible avoid the breeding bird season, the Department recommends that beginning thirty days prior to the disturbance of suitable nesting habitat the project proponent should arrange for weekly bird surveys to detect any protected native birds in the habitat to be removed and any other such habitat within 300 feet of the construction work area (within 500 feet for raptors) as access to adjacent areas allows. The surveys should be conducted by a qualified biologist with experience in conducting breeding bird surveys. The surveys should continue on a weekly basis with the last survey being conducted no more than three days prior to the initiation of clearance/construction work. If a protected native bird is found, the project proponent should delay all clearance/construction disturbance activities within 300 feet of suitable nesting habitat (within 500 feet for suitable raptor nesting habitat) until August 31. Alternatively, the Qualified Biologist could continue the surveys in order to locate any nests. If an active nest is located, clearing and construction within 300 feet of the nest (within 500 feet for raptor nests) or as determined by a qualified biological monitor, must be postponed until the nest is vacated and juveniles have fledged and when there is no evidence of a second attempt at nesting. Limits of construction to avoid a nest should be established in the field with flagging and stakes or construction fencing marking the protected area 300 feet (or 500 feet) from the nest. Construction personnel should be instructed on the sensitivity of the area. The project proponent should record the results of the recommended protective measures described above to document compliance with applicable State and Federal laws pertaining to the protection of native birds.
3. Jurisdictional Drainages - The DMND does not state whether there are any features on the site which may be subject to regulation under Fish and Game Code Section 1600 et seq.
- a. The Department requires a Streambed Alteration Agreement (SAA), pursuant to Section 1600 et seq. of the Fish and Game Code, with the applicant prior to any direct or indirect impact to a lake or stream bed, bank or channel or associated riparian resources. The Department's issuance of a SAA may be a project that is subject to CEQA. To facilitate our issuance of the Agreement when CEQA applies, the Department as a responsible agency under CEQA may consider the local jurisdiction's (lead agency) document for the project. To minimize additional requirements by the Department under CEQA the document should fully identify the potential impacts to the lake, stream or riparian resources and provide adequate avoidance, mitigation, monitoring and reporting commitments for issuance of the Agreement. Early consultation is recommended, since modification of the proposed project may be required to avoid or reduce impacts to fish and wildlife resources.

The Department recommends that the CEQA document address the Department's concerns for the benefit of wildlife and supporting natural resources.



Mr. William Saunders  
September 17, 2009  
Page 3 of 3

Thank you for this opportunity to provide comment. Please contact Ms. Kelly Schmoker, Staff Environmental Scientist, at (626) 848-8382 if you should have any questions and for further coordination on the proposed project.

Sincerely,



Edmund Pert  
Regional Manager  
South Coast Region

ec: Ms. Helen Birss, Los Alamitos  
Ms. Terri Dickerson, Laguna Niguel  
Ms. Kelly Schmoker, Pasadena  
Mr. Scott Harris, Pasadena  
cc: State Clearinghouse, Sacramento



GAIL FARBER, Director

## COUNTY OF LOS ANGELES

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ADDRESS ALL CORRESPONDENCE TO  
P.O. BOX 1460  
ALHAMBRA, CALIFORNIA 91802-1460

IN REPLY PLEASE  
REFER TO FILE **WR-4**

October 6, 2009

Mr. Edmund Pert  
Department of Fish and Game  
South Coast Region  
4949 Viewridge Avenue  
San Diego, CA 92123

Dear Mr. Pert:

#### **WEATHER MODIFICATION (CLOUD SEEDING) PROGRAM DRAFT MITIGATED NEGATIVE DECLARATION – COUNTY OF LOS ANGELES**

We received your enclosed letter dated September 17, 2009, providing comments on the above-mentioned document. Recent wildfires have burned a majority of the targeted watersheds. As detailed within the suspension criteria of the Draft Mitigated Negative Declaration (DMND), planned cloud seeding operations have been suspended until the targeted watersheds' vegetative cover has sufficiently recovered. This typically takes three to five years.

Although we received your letter approximately one month after the end of the 30-day comment period ending August 24, 2009, we would like to address your concerns. The concerns are numbered according to the numbering from your letter. These changes have been incorporated into the final mitigated negative declaration and will be included in future cloud seeding operational protocols.

- 1a. DMND does not adequately address direct and cumulative impacts to downstream habitats due to altered rain patterns or prolonged snow pack anticipated on the project.

Sections 4.4-Biological Resources and 4.8-Hydrology and Water Quality detail the potential cumulative and direct impact to the watershed habitat due to cloud seeding. The project suspension criteria, as outlined within the Description of Project section of the document, will be implemented as mitigation for potential impacts associated with increased stream flow velocities and volumes contributable to seeded rainfall patterns.

Mr. Edmund Pert  
October 6, 2009  
Page 2

Project operations will be suspended for events forecast to produce over 5 inches of rainfall within a 24-hour period, or over 1 inch of rainfall within a 1-hour period. This mitigation measure will prevent excessive runoff and keep target watersheds within their natural variability for rainfall and snowpack according to historical records. No seeding will occur outside the normal storm season from October 15 to April 15 and will be limited by suspension criteria during wetter than normal years. With Mitigation Measure WATER-1, Criteria 2 incorporated into the program, a less than significant direct, indirect, or cumulative impact will occur to existing rainfall patterns and thus the targeted habitats.

- 1b. The DMND does not state if protocol surveys for sensitive plants and animals were conducted within areas where construction of the seeding mechanisms will occur.

As described within the DMND, the project will locate cloud seeding generators at dams, debris basins, and sediment placement sites that are owned and maintained by the Los Angeles County Flood Control District. These facilities are used for flood control and water conservation purposes. The cloud seeding equipment is relatively small and will not alter the existing use of the facilities. The 15 selected project sites are fenced-off compounds previously graded with very large areas of concrete and asphalt. Due to the critical nature of these facilities, they are continually maintained in order to assure that habitat is not established that would affect their operational capability and structural soundness. Equipment installation will not degrade the quality of the environment, reduce the habitat of any wildlife species, or have any significant direct impact to wildlife individuals or populations. Equipment sites were chosen specifically within regions of the property covered with asphalt or concrete outside the streambed where no vegetation or habitat exists. The previously disturbed nature of the locations avoids conflict with potential resources, including biological resources and habitat, thus no protocol surveys were needed or conducted for locations where the cloud seeding equipment is to be installed.

2. "The project may result in the removal of vegetation and disturbances to the ground and therefore may result in take of nesting native bird species."

As described in the previous response, the project will not degrade the quality of the environment, reduce the habitat of any wildlife species, or have any significant direct impact to wildlife individuals or populations due to the installation of any cloud seeding equipment. Equipment sites were chosen

Mr. Edmund Pert  
October 6, 2009  
Page 3

specifically within regions of the property covered with asphalt or concrete outside the streambed where no vegetation or habitat exists. The previously disturbed nature of the locations avoids conflict with potential resources, including biological resources and habitat. Based on the DMND, equipment installation would take one day per site. Equipment installation will take place from September through November, outside bird breeding season. The project will not result in the take of nesting native bird species.

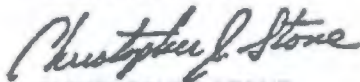
3. "The DMND does not state whether there are any features on the site which may be subject to regulation under Fish and Game Code Section 1600 et seq."

As described in the previous response, equipment sites were chosen specifically within regions of the property covered with asphalt or concrete outside the streambed where no vegetation or habitat exists. None of the equipment installed will substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake. As such, there are no features of the cloud seeding project which would be subject to regulation under Fish and Game Code Section 1600 et seq.

If you have any further questions regarding this matter, you or your staff may contact Mr. William Saunders at (626) 458-6187 or at [wsaunder@dpw.lacounty.gov](mailto:wsaunder@dpw.lacounty.gov).

Very truly yours,

GAIL FARBER  
Director of Public Works



CHRISTOPHER STONE  
Assistant Deputy Director  
Water Resources Division

WWS:vt  
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Enc.

## **APPENDIX E REPORTING AND MONITORING PROGRAM**



## APPENDIX E

### PROGRAM FOR REPORTING AND MONITORING THE IMPLEMENTATION OF ENVIRONMENTAL IMPACT MITIGATION MEASURES WEATHER MODIFICATION (CLOUD SEEDING) SERVICES

The following program will be used to monitor and implement the mitigation measures discussed in Section XVIII of the Negative Declaration.

#### **1.0 Program Management**

- 1.1 After adoption of environmental mitigation measures by the Board of Supervisors, Public Works shall designate responsibility for monitoring and reporting compliance with each mitigation measure.
- 1.2 To facilitate implementation and enforcement of this Program, Public Works shall ensure that the obligation to monitor and report compliance with environmental mitigation measures is required by all project-related contracts between the County and consultant, prime construction contractor(s), and any other person or entity who is designated to monitor and/or report compliance under this Program during the preconstruction and construction phases.
- 1.3 Public Works, as appropriate, shall take all necessary and appropriate measures to ensure that each project-related environmental mitigation measure, which was adopted, is implemented and maintained.

#### **2.0 Preconstruction**

- 2.1 Public Works or consultant for project design is responsible for incorporating mitigation measures into project design and confirming in writing that final construction drawings include all design-related mitigation measures.
- 2.2 Public Works or consultant for design of project-related off-site improvements is responsible for incorporating mitigation measures and confirming in writing that final construction drawings include all design related mitigation measures.

#### **3.0 Construction**

- 3.1 Public Works or prime construction contractor(s) for project and/or for project-related off-site improvements is responsible for constructing and/or monitoring the construction of mitigation measures incorporated in final construction documents and reporting instances of noncompliance in writing.

- 3.2 Public Works or prime construction contractor(s) for project and/or for project-related off-site improvements is responsible for implementation and/or monitoring the implementation of mitigation measures affecting methods and practices of construction (e.g., hours of operation, noise control of machinery) and reporting instances of noncompliance in writing.
- 3.3 Public Works is responsible for monitoring compliance of prime construction contractor(s) with responsibility set forth in 3.1 above and reporting noncompliance in writing.

#### **4.0 Project Operation**

- 4.1 After completion and final acceptance of the project, Public Works is responsible for monitoring and maintaining compliance with adopted mitigation measures, which affect project operation.

WEATHER MODIFICATION ASSOCIATIONQUALIFICATIONS AND PROCEDURES FOR CERTIFICATIONPURPOSE OF CERTIFICATION

One of the stated purposes of the WMA is to encourage and promote the highest standards of conduct. In order to further this goal and to protect the public interest, the WMA has established a certification program for individuals qualified to manage and/or operate weather modification field programs of a research or operational nature.

Two types of certification have been established: (1) a Certified Weather Modification Manager who has the character, knowledge and experience necessary to design, manage, evaluate and have overall responsibility for a weather modification program; (2) a Certified Weather Modification Operator who has the character, knowledge and experience necessary to provide the day-to-day, on-site supervision of a weather modification field program.

QUALIFICATIONS FOR CERTIFICATION

Weather Modification Manager - Certification shall be based on character, knowledge and experience. Certification shall be granted at the discretion of the Board, but the following shall be considered minimum requirements:

- Category A: Eight years' (96 active months) experience in weather modification research and/or operations.
- Category B: A Bachelor's Degree with at least 25 semester hours of meteorology plus five years' (60 active months) experience in weather modification research and/or operations.
- Category C: A Master's Degree or a Doctorate in Atmospheric Science and three years' (36 active months) experience in weather modification research and/or operations.

The experience requirement may be fulfilled by either field work or office or laboratory studies.

In addition to the above requirements, the applicant must pass a written examination (open

book type) and an oral examination by the Certification Board. The applicant must also submit a report authored or co-authored by the applicant demonstrating the extent of his or her involvement in weather modification. The report must be more than an operations report and must exhibit skills in research or the theory and practice of weather modification.

The applicant must agree to accept and abide by the current WMA Code of Ethics and any Statement of Standards and Practices that the WMA has adopted at the time of application.

Weather Modification Operator: - Certification shall be based on character, knowledge and experience. Certification shall be granted at the discretion of the Board, but the following shall be considered minimum requirements:

- Category A: Twenty months' actual "in the field" experience in weather modification research and/or operations.
- Category B: A degree with at least 25 semester hours of meteorology and eight months' actual "in the field" experience in weather modification research and/or operations.

The field experience must be in a project or projects designed to effect a change in the weather. Actual manipulation to produce a desired change is implied. The experience needs to be in a "responsible charge" position involving making treatment decisions and project management.

An oral examination may be required of the applicant. The applicant must agree to accept and abide by the WMA Code of Ethics and any Statement of Standards and Practices that the WMA has adopted at the time of application.

References are required from the employer, sponsor, or project manager for any field experience claimed. No experience credit will be given for any claimed time which is not supported by a favorable reference.



PROCEDURE AND FEES FOR  
CERTIFICATION

Persons desiring certification as individuals qualified for managing or conducting field experiments or operations in weather modification shall write to the Secretary of the Weather Modification Association requesting an application form and instructions. The completed application form shall be returned to the Secretary and must be accompanied by a check in the amount of \$150.00 for a Certified Manager application and \$75.00 for a Certified Operator application made payable to the Weather Modification Association. This fee will be retained by the Weather Modification Association whether the application is accepted or denied.

The Certification Board shall review the application form and all other information required and will determine whether the applicant has satisfied the requirements for qualification for certification. The Certification Board may request additional information from the applicant prior to making a final decision as to whether or not the applicant meets the criteria for certification.

After review of the application, the Chairman of the Certification Board shall notify the applicant of the decision of the Board. If the application is approved, the Chairman of the Certification Board shall give the applicant a certificate to verify that the individual has met the qualification for certification.

Unsuccessful applicants may reapply for certification not earlier than one calendar year after notification of disapproval. Each subsequent application for certification shall be accompanied by a payment of the normal fee.

PERIOD OF CERTIFICATION AND RENEWAL

Certification of a member shall be effective for a period of three years from the date of issuance. Application for renewal of certification shall be submitted prior to expiration date in writing and accompanied by a fee of \$150 for a Certified Manager or \$75 for a Certified Operator. The same fees apply for those seeking reinstatement after a lapsed certification. Issuance of renewal or reinstatement shall be granted by the Board if there has been no indication of violations of the WMA Code of Ethics, or the current statement on Standards and Practices, and the applicant provides evidence of a continuing involvement in weather modification during the preceding years amounting to at least 20% of his or her professional working hours, or the applicant is deemed to be knowledgeable on the current status of weather modification technology as determined by the Certification Board. If the Board does not recommend renewal or reinstatement, the case may be presented for the consideration of the certified members at any regular meeting if the applicant requests. Renewal or reinstatement shall be denied only if a majority of the certified members in attendance at the meeting indicate by secret written ballot that renewal shall be denied. The fee will be retained whether renewal or reinstatement is granted or not.